



STATE OF RHODE ISLAND

# ENERGY EFFICIENCY & RESOURCE MANAGEMENT COUNCIL

CONSULTANT TEAM

## Consultant Team Initial Review First Draft of the 2022 Annual Plan

Presented By: EERMC Consultant Team

Date: July 29, 2021



# Outline

---

High-Level Review

Residential Sector Review

Commercial and Industrial Review

Cross-Sector Review

Next Steps



# High-Level Process

Received 1<sup>st</sup> Draft 2022 EE Annual Plan by July 16<sup>th</sup>

Narrative text on 15<sup>th</sup>, BC Models 16<sup>th</sup>

Initial review informed Council materials finalized 7/23

Continued review to inform talking points & Plan comments through tomorrow

Full comments due back to National Grid by July 30<sup>th</sup>

Opportunity to discuss further at August Council meeting, or via 1-on-1 Council member briefings upon request

More to come in Next Steps at end of presentation



# High-Level Focus

Two key prior Council discussions will guide this section

Consistency with **Council Priorities**

Responsiveness to **Outline Memorandum Feedback**

Due to time constraint, we focus on **opportunities for improvement**



# CONSISTENCY WITH COUNCIL PRIORITIES





# Five Council Priorities

---

**Priority #1:** Align with Three-Year Plan

**Priority #2:** Comply with LCP Standards

**Priority #3:** Incorporate Stakeholder Input

**Priority #4:** Support Equity & Access

**Priority #5:** Ensure Effective & Efficient Development & Review Process



# Priority #1: Align with Three-Year Plan

## Priority Areas

## 1<sup>st</sup> Draft Plan Findings



Target “High Scenario” for savings and benefits goals, document and justify barriers



No reference to ‘High Scenario’ for 2022 anywhere in Main Text, nor any attempt to clearly document why goals fall short



Align with Market Potential Study (MPS) & Document how MPS findings were applied



Plan text is responsive to key end use opportunities, Plan goals less so



Maximize cost-efficiency while delivering maximum savings and benefits



Text references cost-efficiency, though strategies to pursue not clearly articulated



Coordinate cost-share and leverage investments with other entities



Again, references made throughout, but concrete commitments lacking



= Addressed



= Needs Improvement

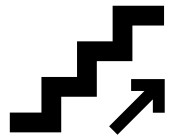


= Not Addressed



# Priority #2: Comply with LCP Standards

## Priority Areas

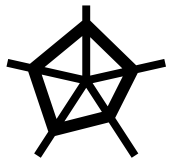


Apply the clear, outcome-oriented direction provided in the LCP Standards section on General Plan Design and Principles for annual planning

## 1<sup>st</sup> Draft Plan Findings



Section of Plan dedicated to mapping these design principles to Plan content, though program-level application could be more concrete and specific



Include key metrics to be tracked and reported



Planned metrics include GHG emissions and renter participation. Would value clear central list of all metrics, how calculated, and when reported

✓ = Addressed    ? = Needs Improvement    X = Not Addressed





# Priority #3: Incorporate Stakeholder Input

## Priority Areas



Incorporate feedback from Annual CHP event stakeholders



Reflect Priorities set by Technical Working Group members



Reflect Equity Working Group (EWG) findings and conclusions



Incorporate input from robust and actionable Customer Feedback Activities

## 1<sup>st</sup> Draft Plan Findings



CHP section in main text does not reference annual CHP event



Plan documents priorities, but does not clearly reflect in specific planned actions



Equity discussed as a priority. Some commitments could be strengthened. Expect more from EWG before final draft.



Concrete customer engagement not clearly described, 2021 activities still pending

= Addressed    = Needs Improvement    = Not Addressed



# Priority #4: Support Equity & Access

## Priority Areas

Fulfill and apply results to 2022 EEPP from the 2021 EEPP commitments, including:

- Non-participant/participant Study
- Census of multi-family housing
- Reference to, and application of, finding from the MPS



## 1<sup>st</sup> Draft Plan Findings

These studies will have some initial findings ready to account for in planning, will also need to be accounted for in implementation activities when final results are available.



Commit to create clear, comprehensive list of tasks that will be added to quarterly reports to support full and transparent accountability of performance in achieving the commitments



Several equity discussions in different sections, but clear list of planned tasks for quarterly reporting has not been developed. This needs to be included as a specific element of main text equity discussion.



Include clear, detailed remediation strategies to assure corrective action on underperforming programs



Some discussion of remediation strategies throughout, though not in the form of clear strategic plan

= Addressed    = Needs Improvement    = Not Addressed



# Priority #5: Ensure Effective & Efficient Development & Review Process

## Priority Areas



Adhere to *Key Deliverables and Schedule*

## 1<sup>st</sup> Draft Plan Findings



1<sup>st</sup> Draft Plan delivered on time, anticipate future deadlines will be met



Ensure Council has sufficient time for review and to reach a clear decision regarding whether to support Plan

**TBD**

Report in early responses to redlines and feedback is due to stakeholders by August 12



= Addressed



= Needs Improvement



= Not Addressed



# RESPONSIVENESS TO OUTLINE MEMORANDUM FEEDBACK





# 1<sup>st</sup> Draft Expected Enhancements

- More specific, concrete **outcome-oriented commitments** – many instances of *‘explore’*, *‘consider’*, *‘research’*, *‘revisit’* and *‘investigate’*
- Commitment to **design 2022 Plan based on LCP Standards**
- Beyond PIM net benefits, e.g. to justify budget increase >5% PUC target
- **Lack of numbers** limit initial response to Outline. First draft will provide clearer insights into:
  - **Cost-effectiveness** and **cost efficiency**
  - **Budget, total savings**, and **net benefits** (both RI Test and PIM subset)
  - **Rate and Bill Impacts** (a clear PUC priority area)



# Rate and Bill Impacts

---

No rate and bill impacts analyses provided with 1<sup>st</sup> Draft Plan  
This has been true in past for first draft Plans

Unfortunately, this means there may be no opportunity to consider rate & bill impacts alongside feedback on other Plan elements

This was specifically requested as part of 1<sup>st</sup> Draft in outline comments

Due to PUC emphasis on customer economic impacts in recent proceedings



# Outcome-Oriented Commitments

**Vague and non-committal** language remains a concern

**Qualitative:** Strategic shift away from lighting needs concrete, significant, focused, and creative solutions

Need to see clear commitments that can be verified

Still plenty of 'explore', 'consider', and 'emphasize' verbiage to be scrubbed

**Quantitative:** Plan often resorts to language like 'increase' and 'expand'

In many cases, specific planned numbers are available in BC Models

Incorporate quantitative changes throughout Plan text where possible

Understand that adding this in Final Draft is most efficient



# Design Plan Around LCP Standards

This is partially covered by comments on cost-effectiveness

Standards also a Council priority, so **focusing on budget** for this section

Council discussed viewing **5% budget increase as guidance** at the retreat

1<sup>st</sup> Draft Plan shows budget increase of almost exactly 5%, and directly states that National Grid targeted this precise budget increase

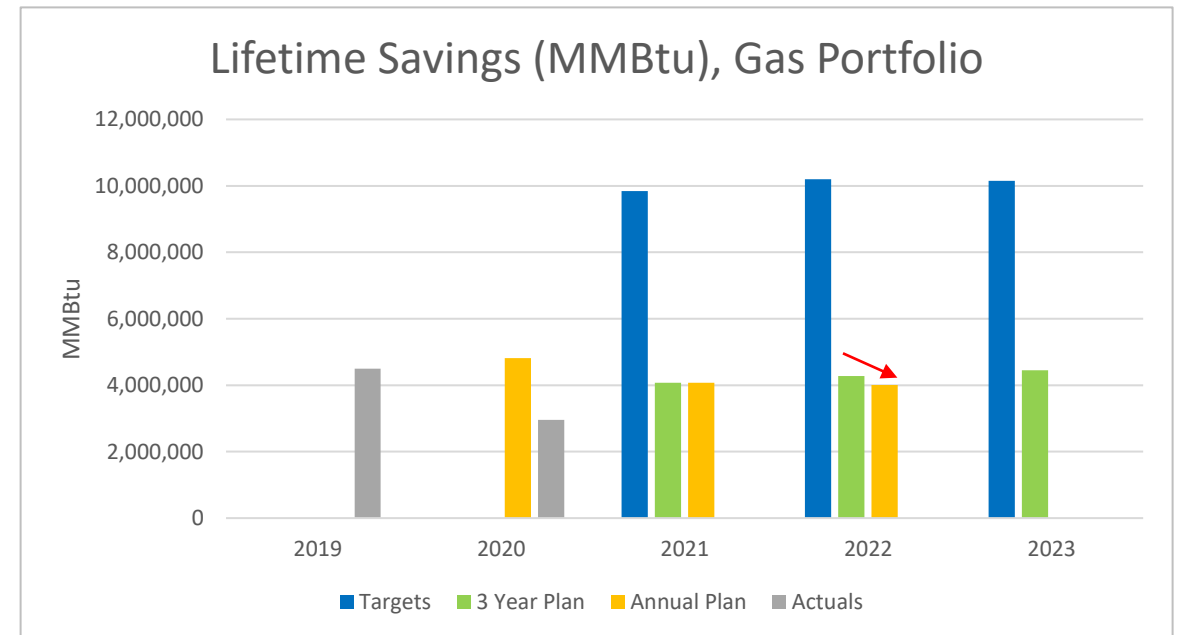
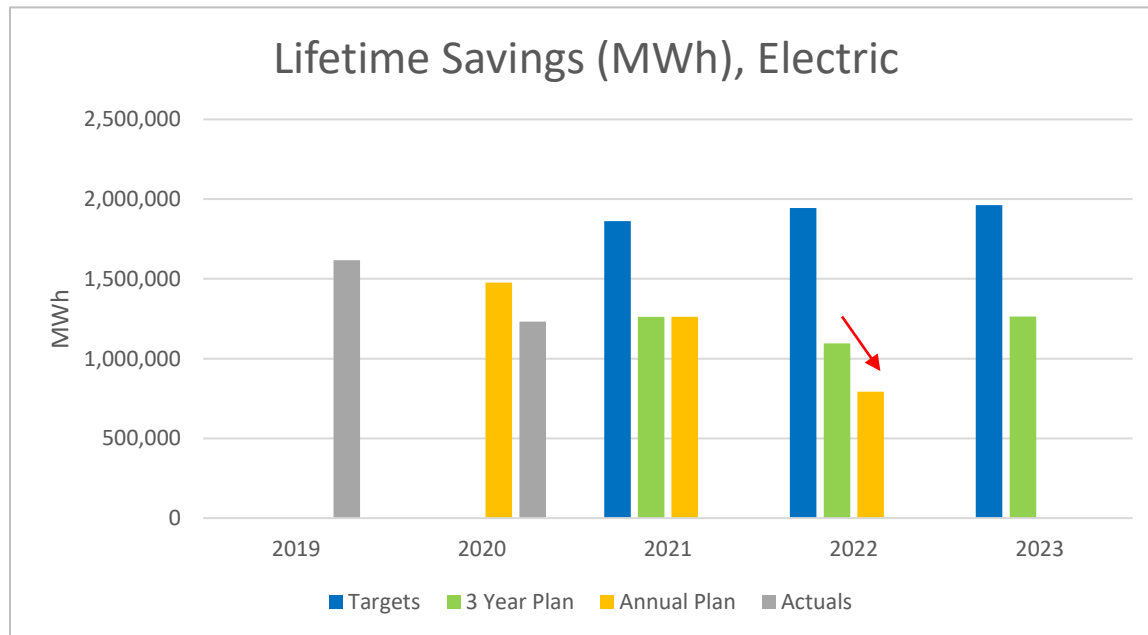
Company should be expected to **justify why Plan is below 'High' scenario** from Three Year Plan rather than simply adhere to this guidance





# Portfolio Lifetime Savings

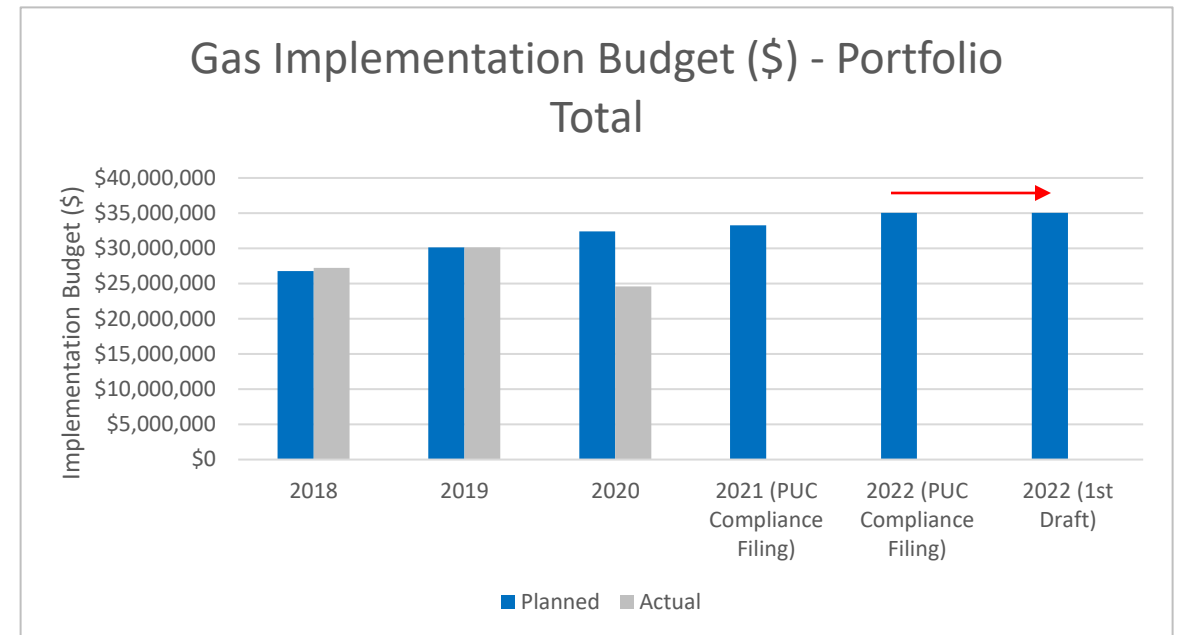
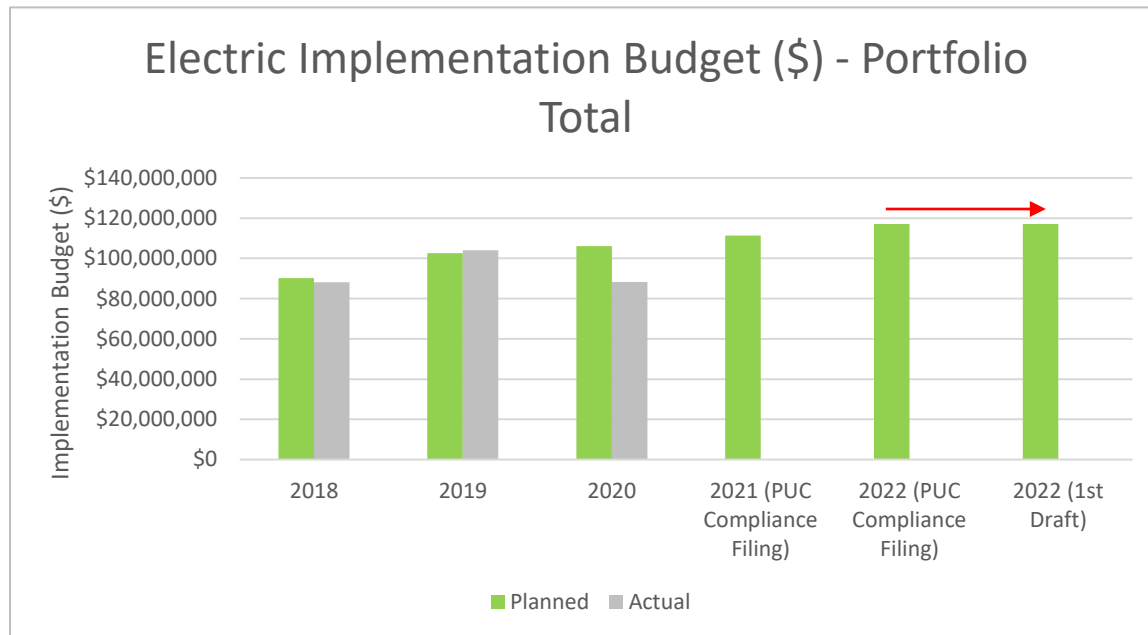
Electric portfolio savings declined from 2022 Compliance Filing (especially without CHP)





# Electric Implementation Budget

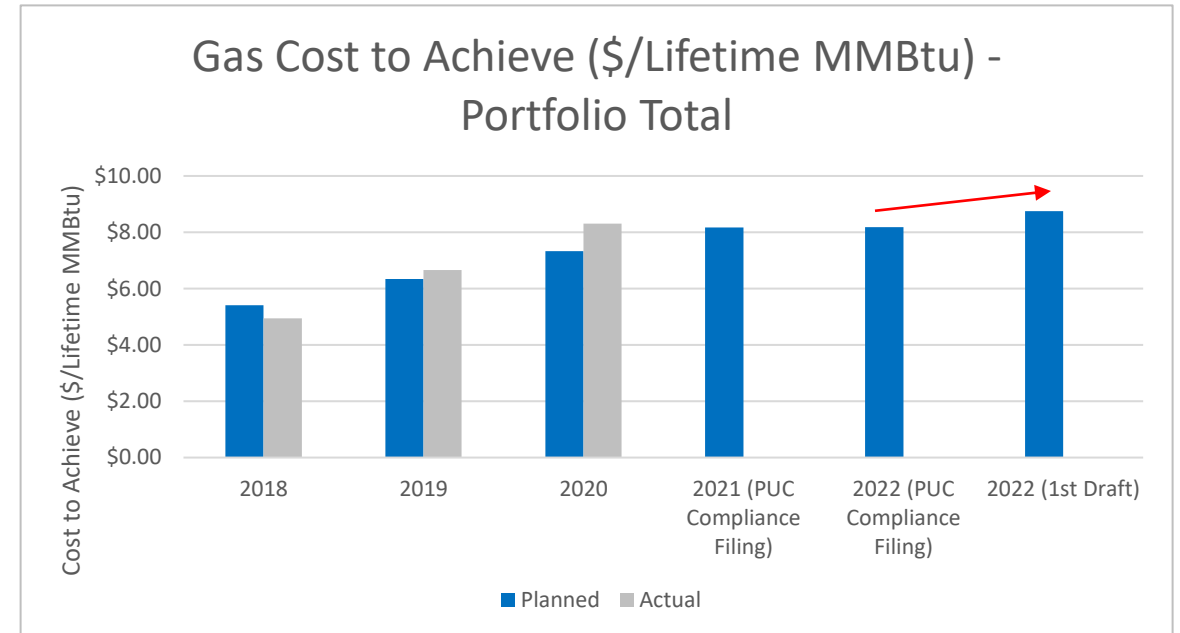
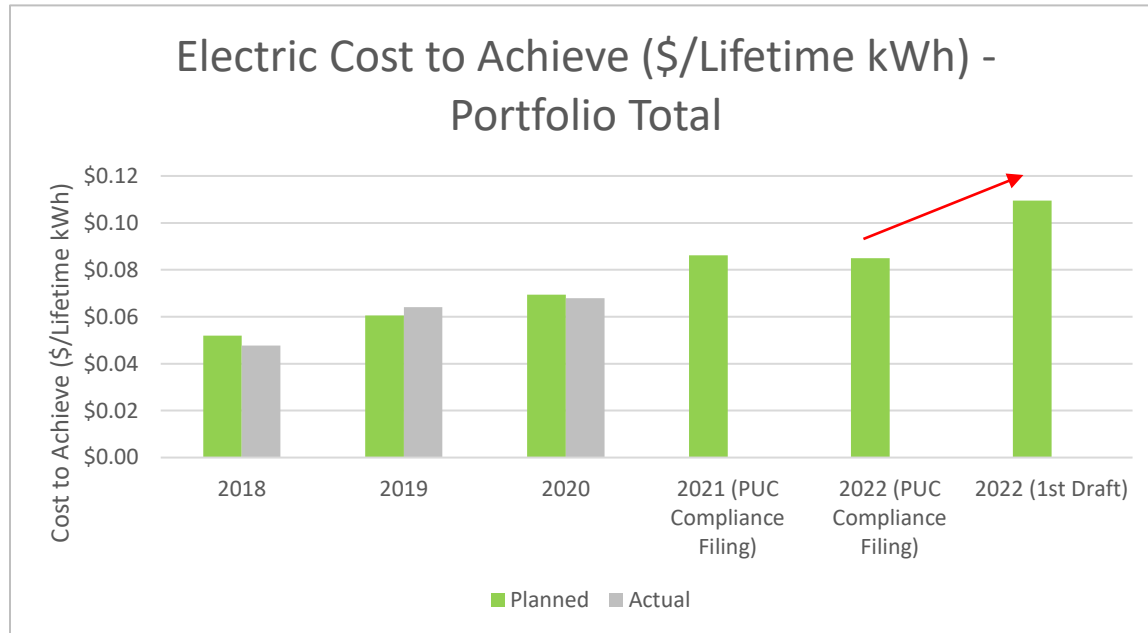
Budgets essentially flat from Compliance Filing to 1<sup>st</sup> Draft, up ~5% from 2021





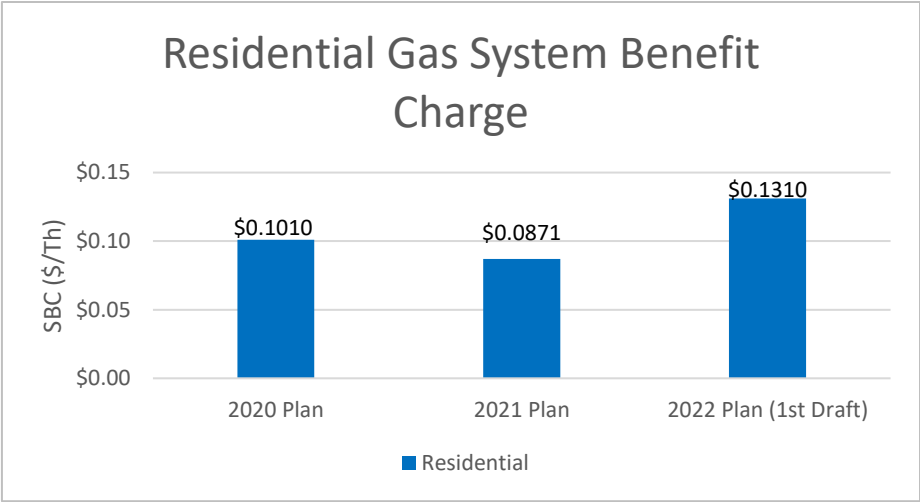
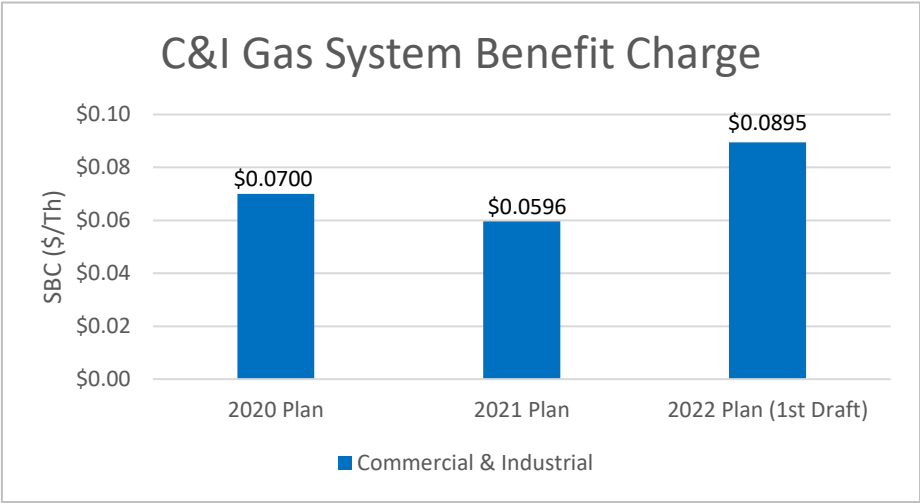
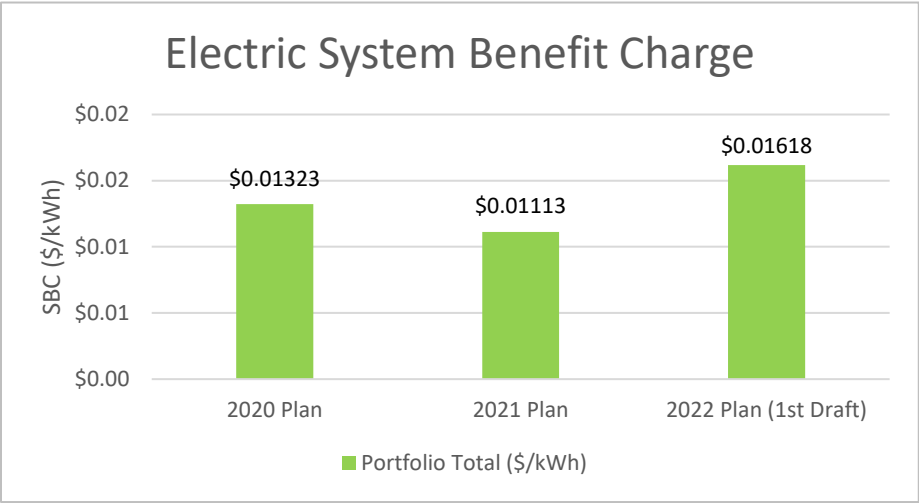
# Portfolio Cost to Achieve

Electric cost to achieve has risen from \$0.08/kWh to \$0.11/kWh between Compliance Filing and 1<sup>st</sup> Draft  
Gas cost to achieve rose from \$8.19/MMBtu to \$8.75/MMBtu





# System Benefit Charge



Increasing System Benefit Charge (SBC) across both portfolios warrants deeper explanation in Plan



# Portfolio Net Benefits: RI Test vs. PIM

Electric portfolio shows funding shift toward C&I sector, which has smallest difference between RI Test and PIM eligible net benefits. Gas shows no clear pattern.

## Electric Total Benefits

Program	Reduction in Net Benefits	2022 (1st Draft) Compared to 2021 Plan (PUC Compliance Filing)
<b>C&amp;I Total</b>	-46.6%	14.6%
<b>Income Eligible Total</b>	-172.1%	2.3%
<b>Residential Total</b>	-115.3%	-9.5%
<b>Portfolio Total</b>	-71.6%	5.2%

## Gas Total Benefits

Program	Reduction in Net Benefits	2022 (1st Draft) Compared to 2021 Plan (PUC Compliance Filing)
<b>C&amp;I Total</b>	-84.2%	3.7%
<b>Income Eligible Total</b>	-139.6%	4.0%
<b>Residential Total</b>	-133.3%	5.2%
<b>Portfolio Total</b>	-101.4%	5.2%



# RESIDENTIAL SECTOR REVIEW





# Residential & Income Eligible - Electric

- Relatively minor changes compared to what was filed for 2022 in the 3-Year Plan
- Income Eligible Multifamily is the exception here
- Budget fluctuations relatively minor as well, with overall decreases at the sector levels
- Net result is a portfolio with a lower cost-to-achieve

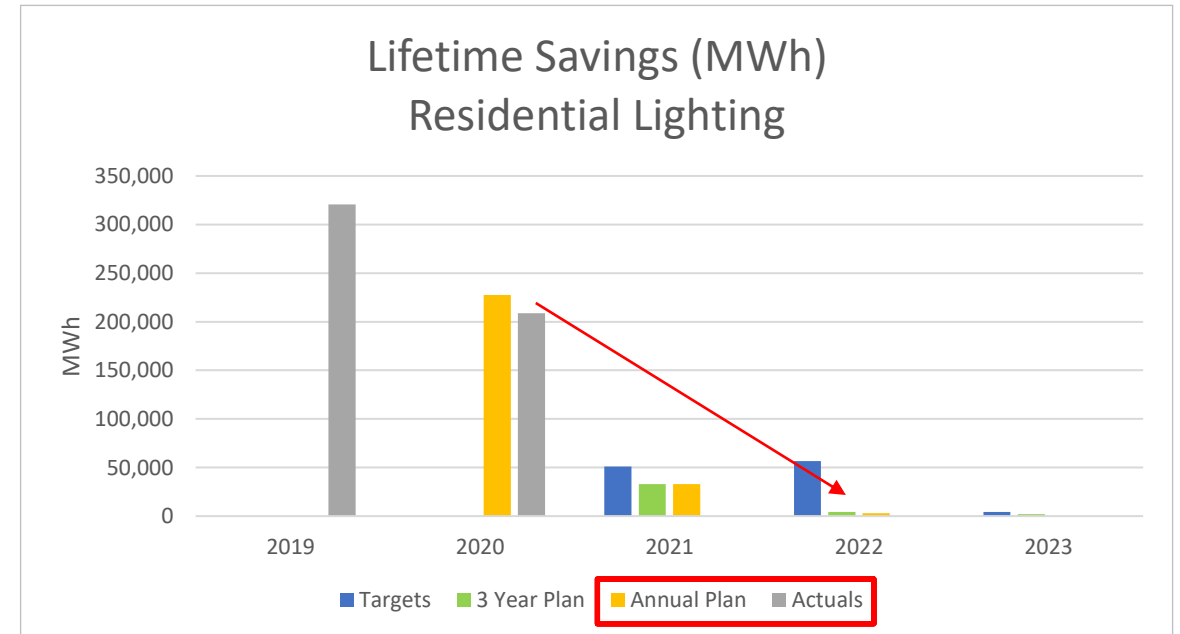
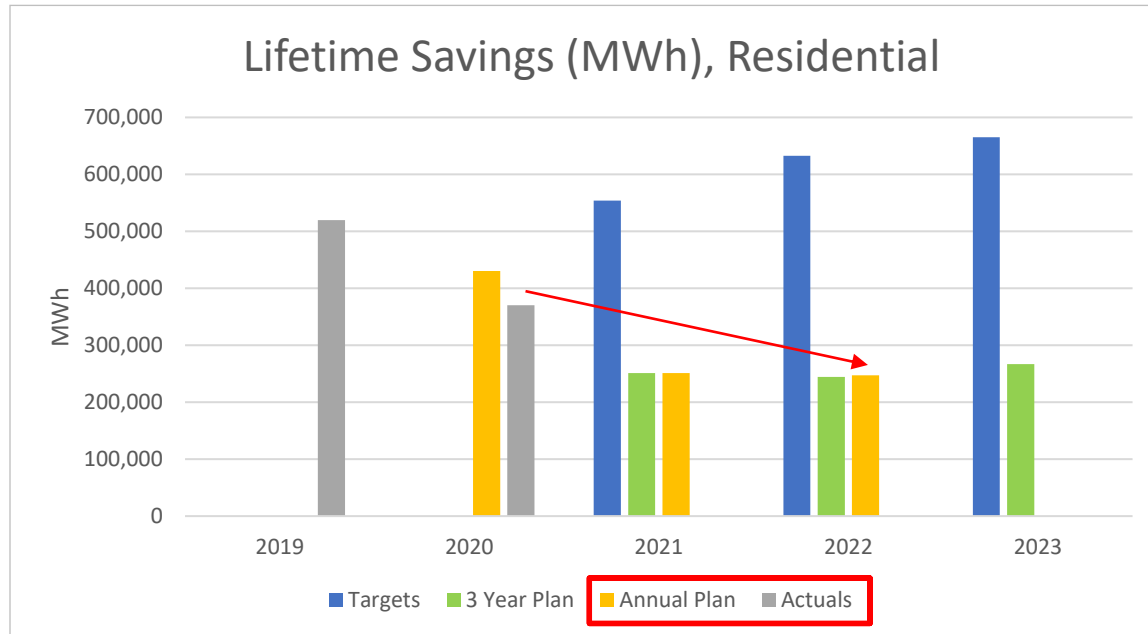
**LIFETIME MWhs**

Program	2022 (1st Draft) Compared to 2022 Plan (PUC Compliance Filing)	
	MWhs	%
Single Family - Income Eligible Services	-220	-0.6%
Income Eligible Multifamily	1,946	8.7%
<b>Income Eligible Total</b>	<b>1,726</b>	<b>2.8%</b>
Residential New Construction	-80	-0.4%
ENERGY STAR® HVAC	1,461	2.3%
EnergyWise	-353	-2.6%
EnergyWise Multifamily	-593	-2.8%
Home Energy Reports	0	0.0%
ENERGY STAR® Lighting	0	
Residential Consumer Products	545	1.4%
<b>Residential Total</b>	<b>981</b>	<b>0.5%</b>



# Residential & Income Eligible - Electric

Substantial reduction in planned residential savings compared to recent actual performance, largely due to decline of lighting

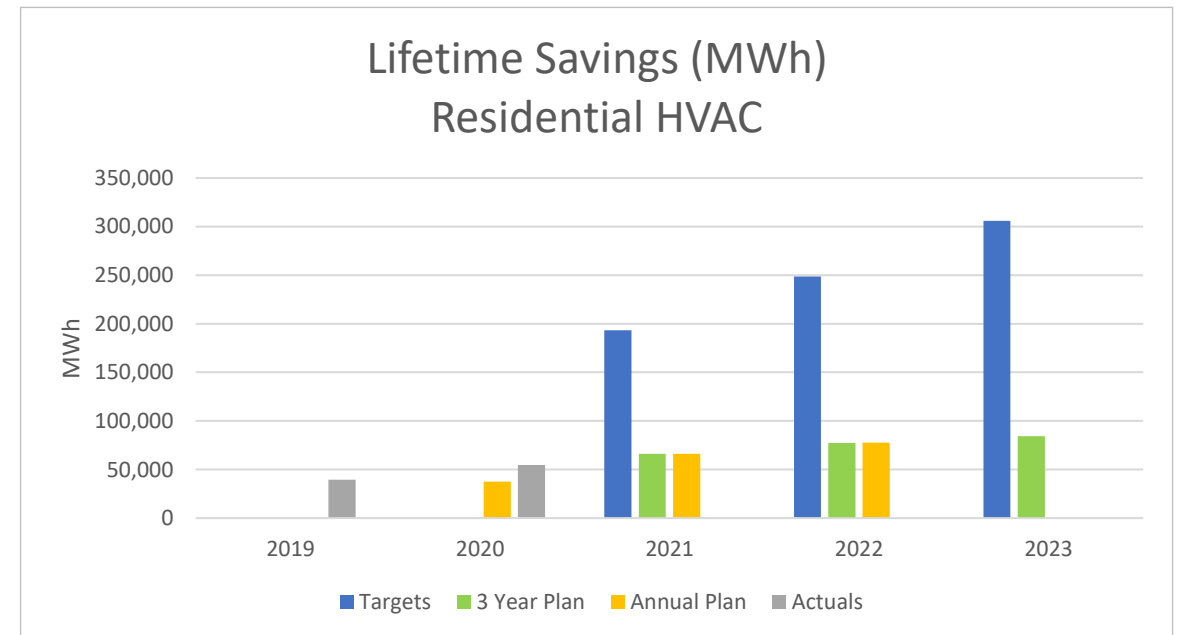
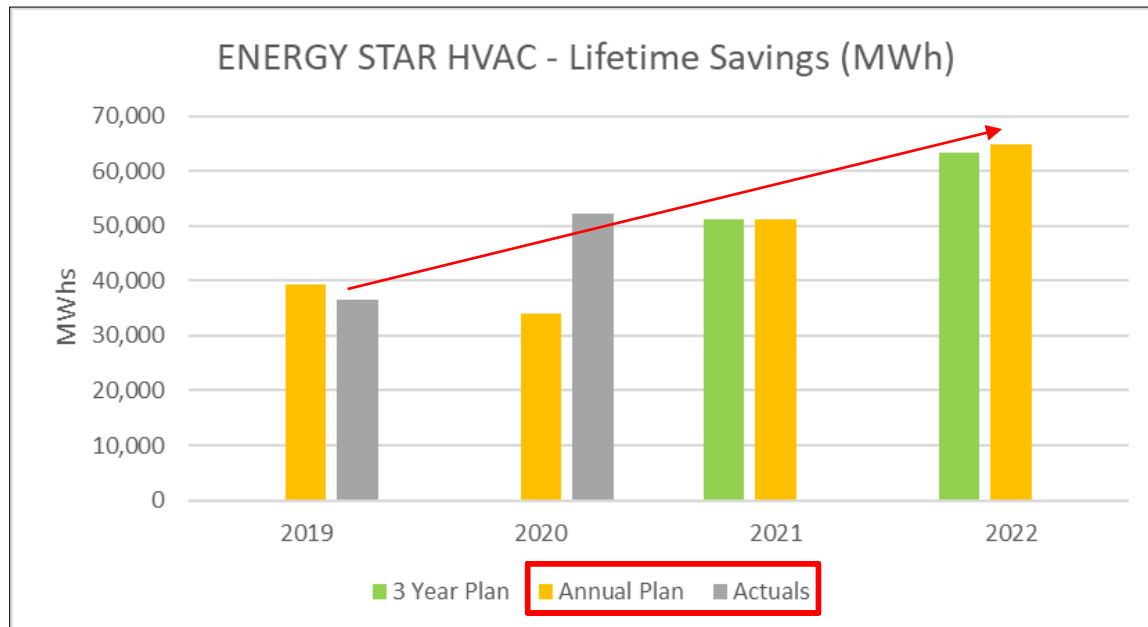






# Residential & Income Eligible - Electric

Increased focus on HVAC is evident in increases to planned savings in the ENERGY STAR HVAC Program, but still a long way to go to meet the potential that is out there



**Note:** HVAC savings are found elsewhere in the sector, and chart on the right includes all opportunities.



# Residential & Income Eligible - Gas

- Relatively minor changes compared to what was filed for 2022 in the 3-Year Plan for *most* programs
- Energy Star HVAC a significant exception
- Budget fluctuations relatively minor as well with slight decreases at sector level
- Net result is a portfolio with a much higher overall cost-to-achieve

## LIFETIME MMBtus

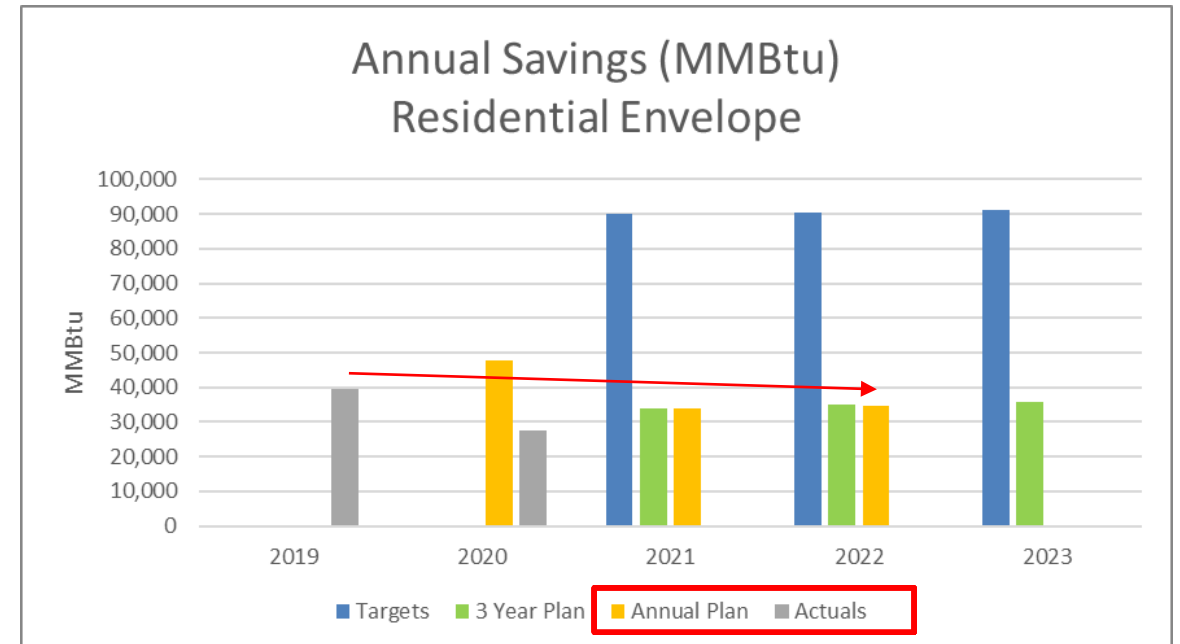
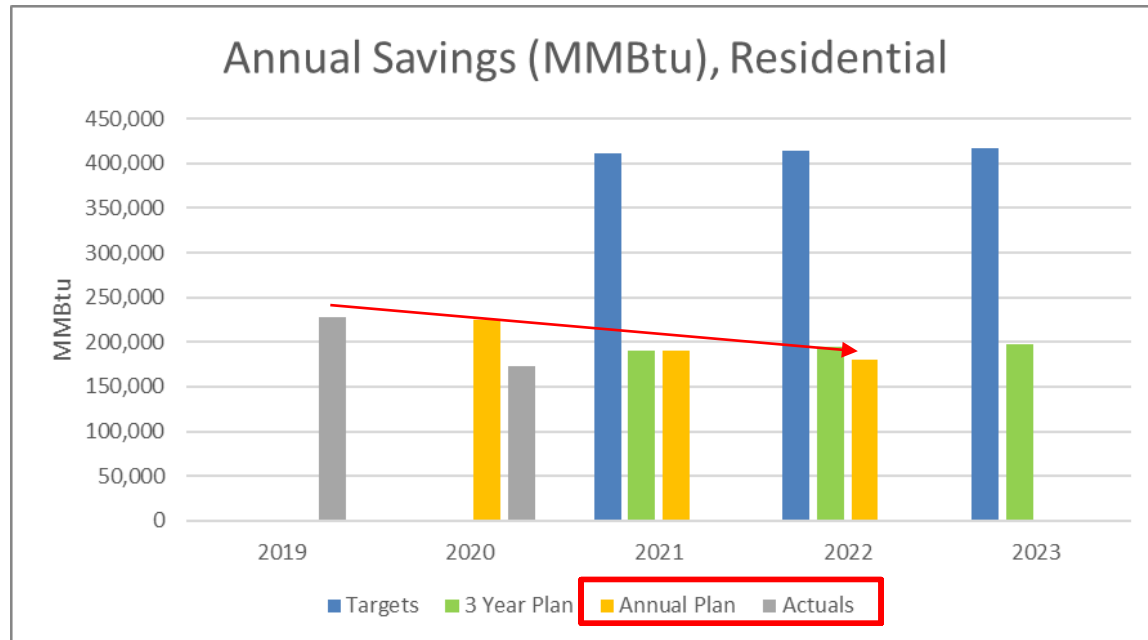
Program	2022 (1st Draft) Compared to 2022 Plan (PUC Compliance Filing)	
	MMBtus	%
Single Family - Income Eligible Services	3,666	2%
Income Eligible Multifamily	-8,762	-3%
<b>Income Eligible Total</b>	<b>-5,097</b>	<b>-1%</b>
Energy Star® HVAC	-259,496	-36%
EnergyWise	-16,502	-3%
EnergyWise Multifamily	-1,929	-1%
Home Energy Reports	0	0%
Residential New Construction	-3,054	-4%
<b>Residential Total</b>	<b>-280,980</b>	<b>-18%</b>



# Residential & Income Eligible - Gas

Decrease in savings compared to recent plans

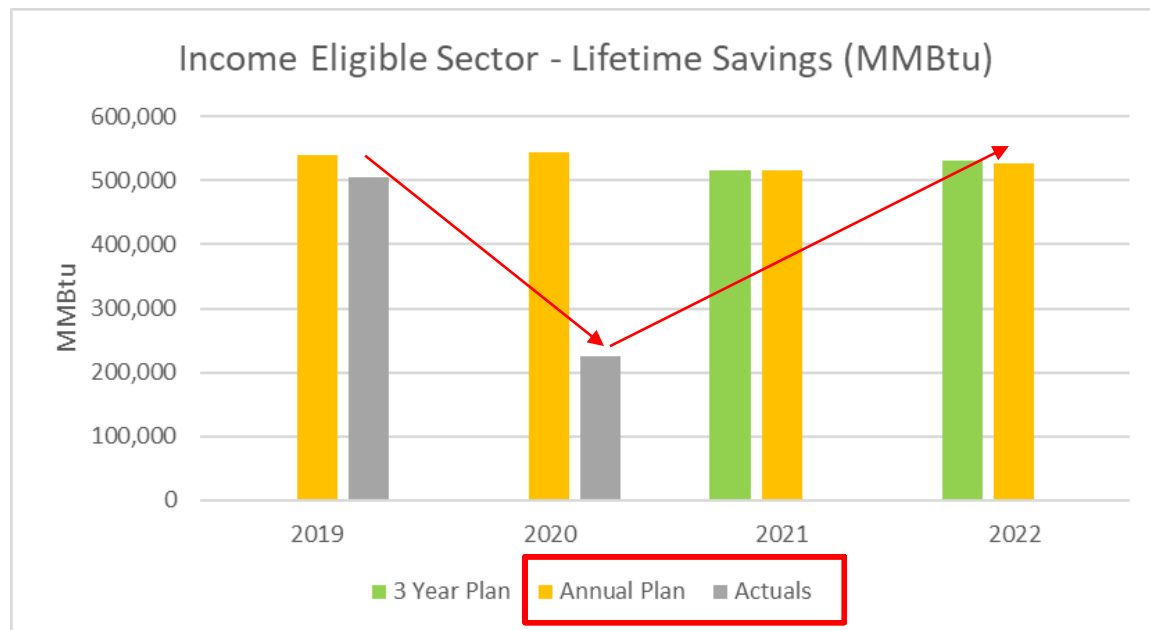
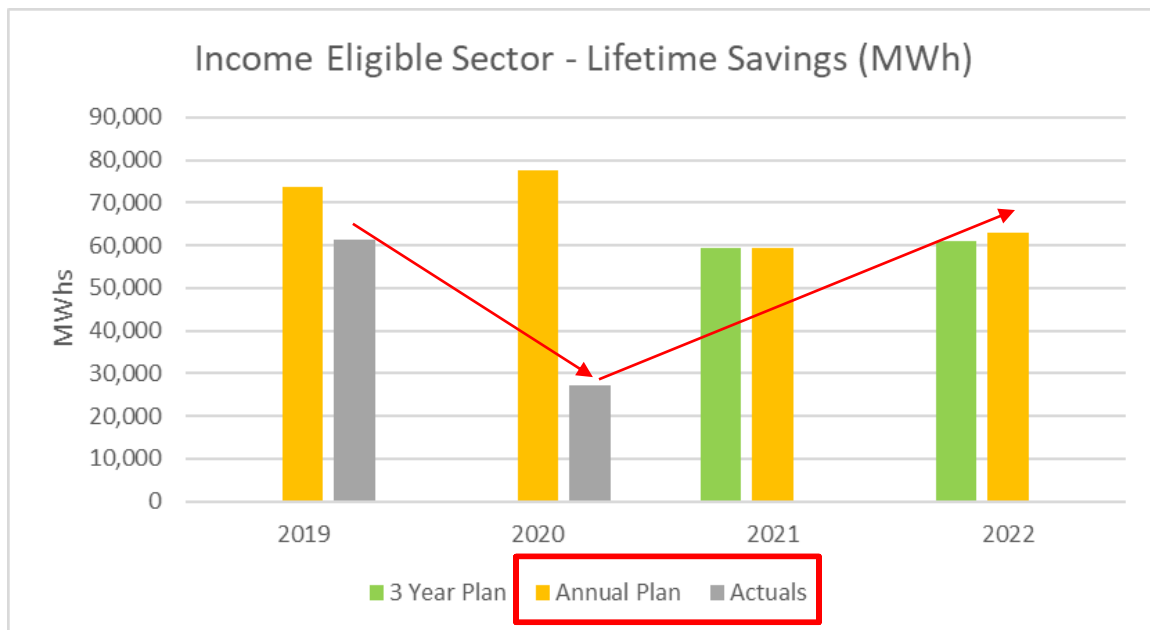
Planned savings lower than 2019 actuals in HVAC and Envelope





# Income Eligible – Electric & Gas

Return to Pre-COVID savings levels for Income Eligible Sector





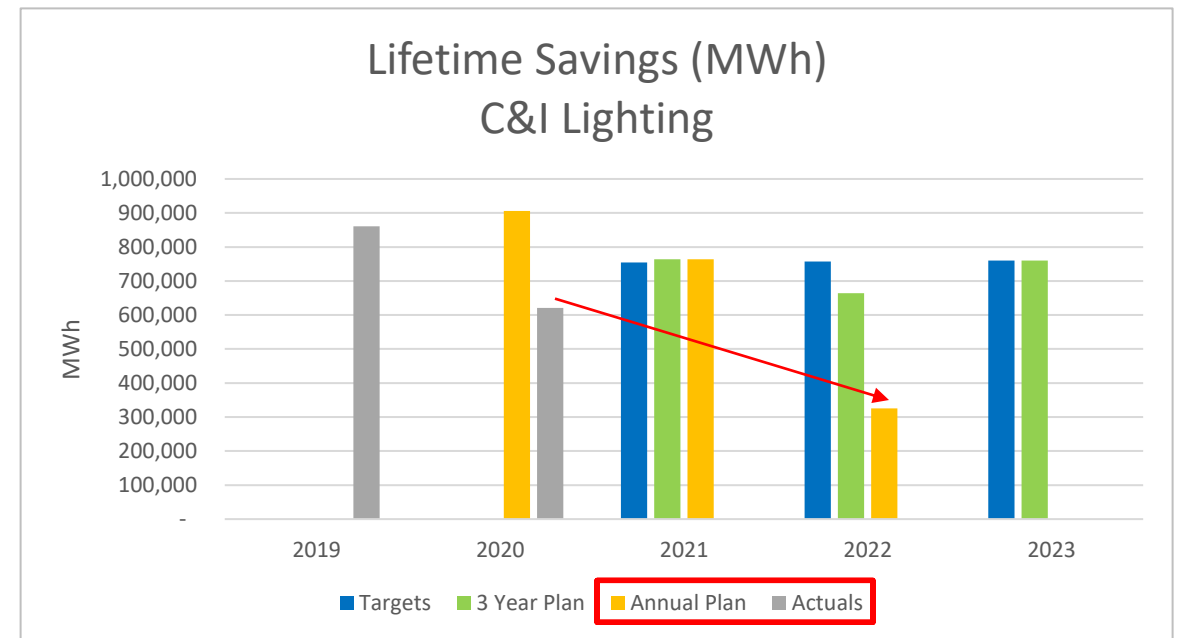
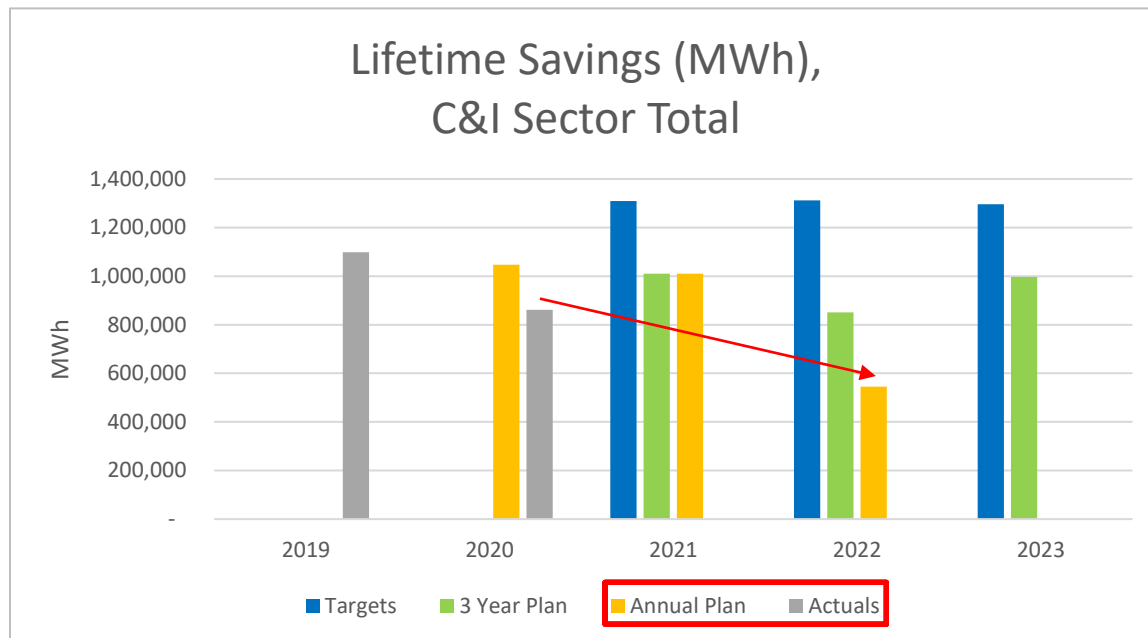
# COMMERCIAL AND INDUSTRIAL SECTOR REVIEW





# Commercial & Industrial - Electric

Substantial reduction in planned C&I savings, largely tracking the expected decline in claimable lighting savings

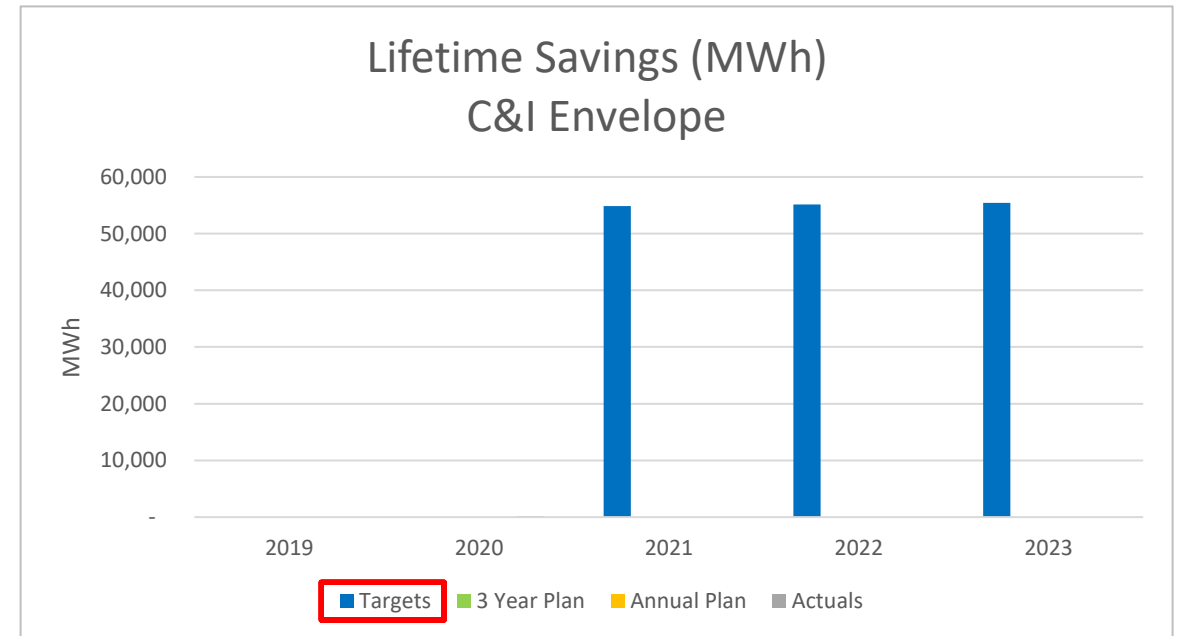
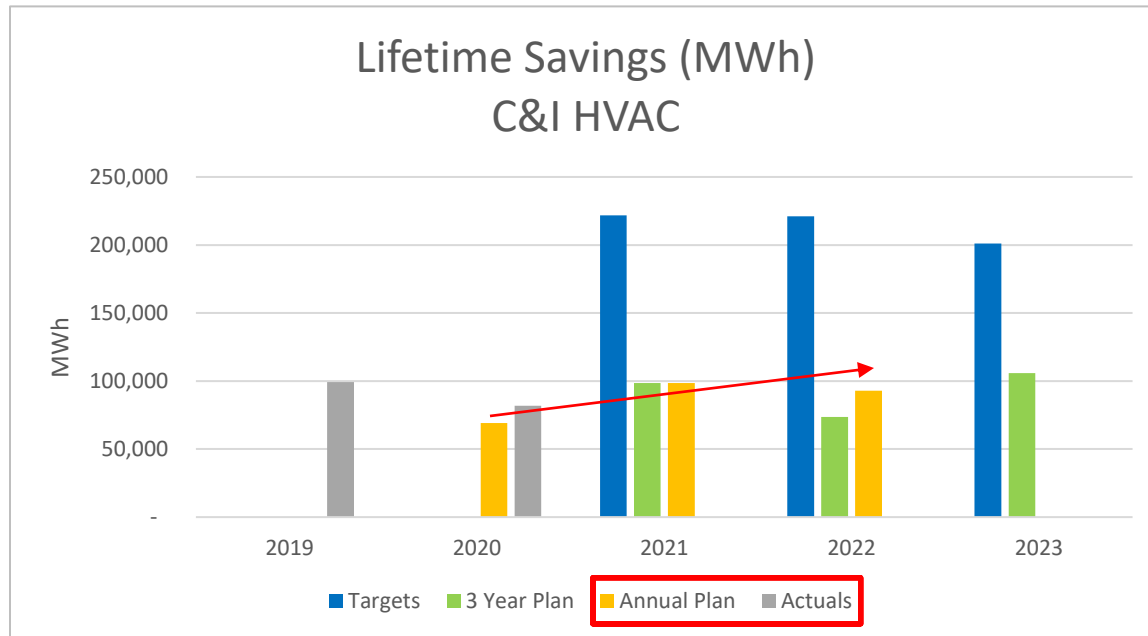


**Note:** Total C&I chart covers all non-CHP measures for comparison to potential study (CHP covered in later slide)



# Commercial & Industrial - Electric

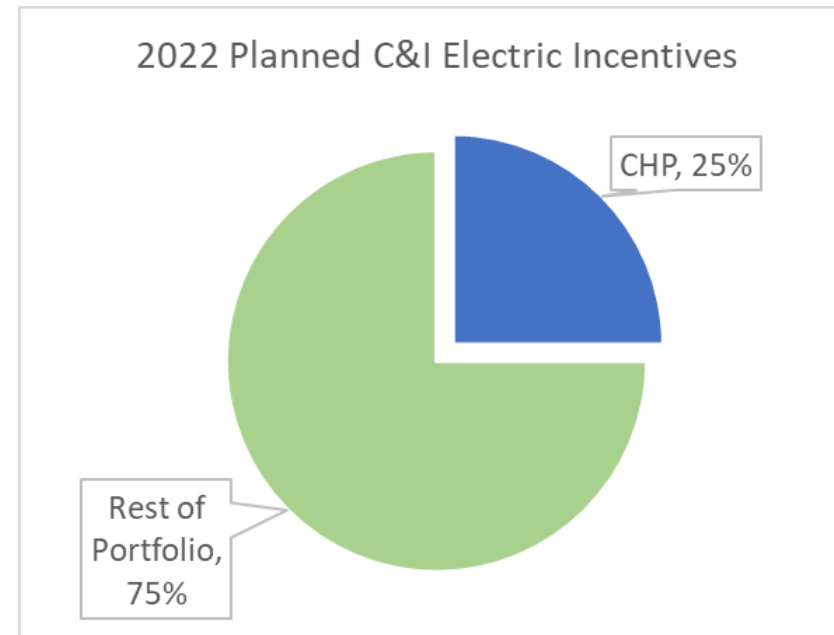
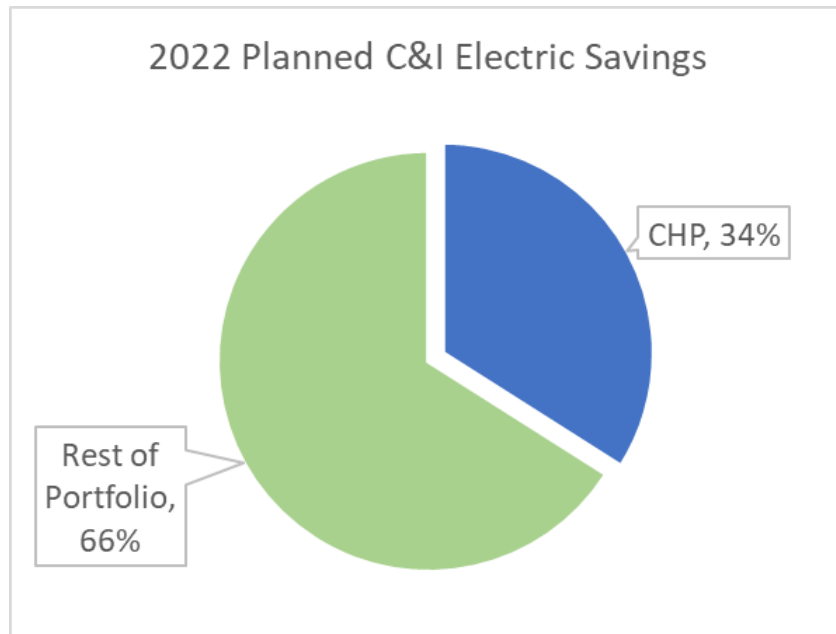
Plan outline called for increased emphasis on HVAC and other non-lighting measures as claimable lighting savings go away





# Commercial & Industrial - Electric

CHP makes up planned ~34% of lifetime savings and ~25% of planned incentive (mostly from a single 13.3MW project)

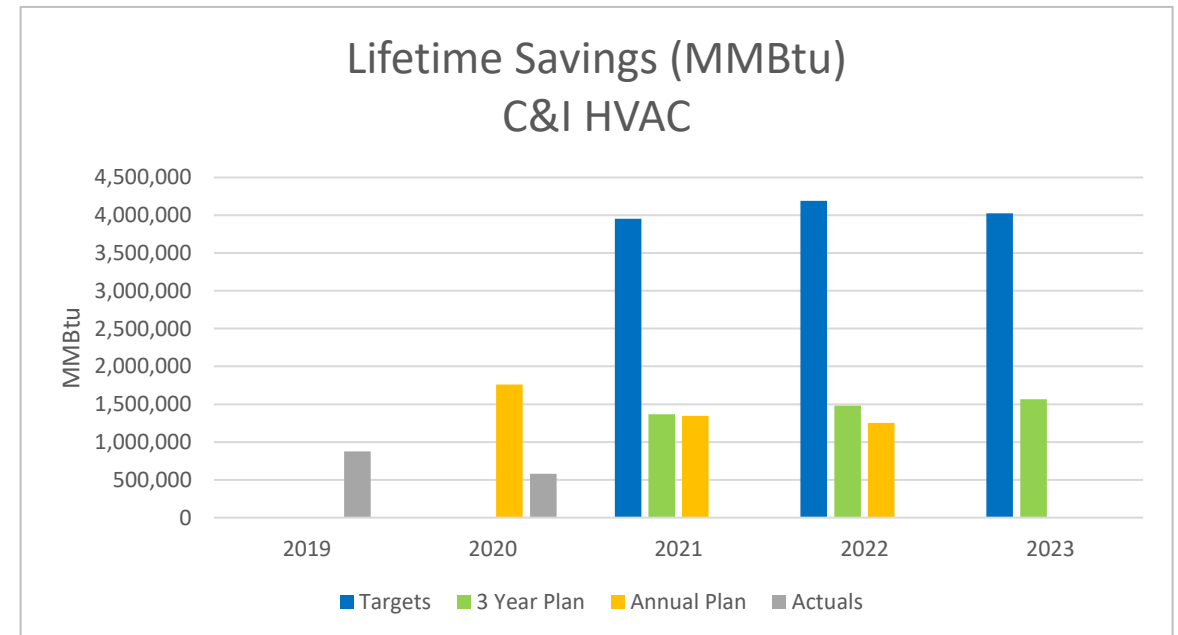
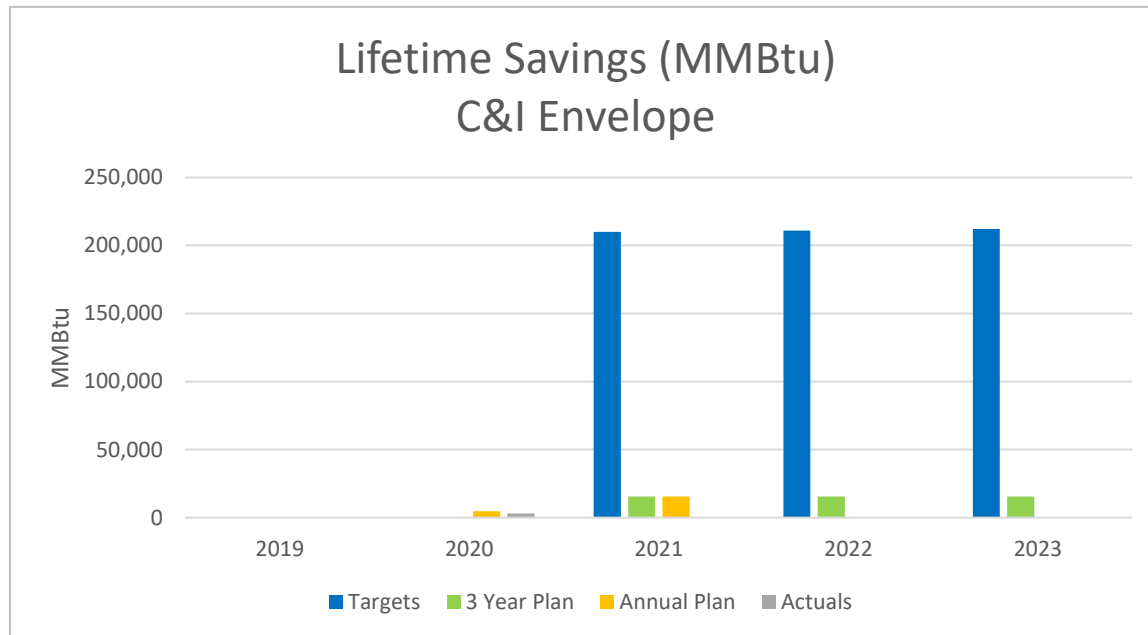






# Commercial & Industrial - Gas

Emphasis on gas HVAC and envelope (especially small biz) is in the plan narrative but still has ample room to grow





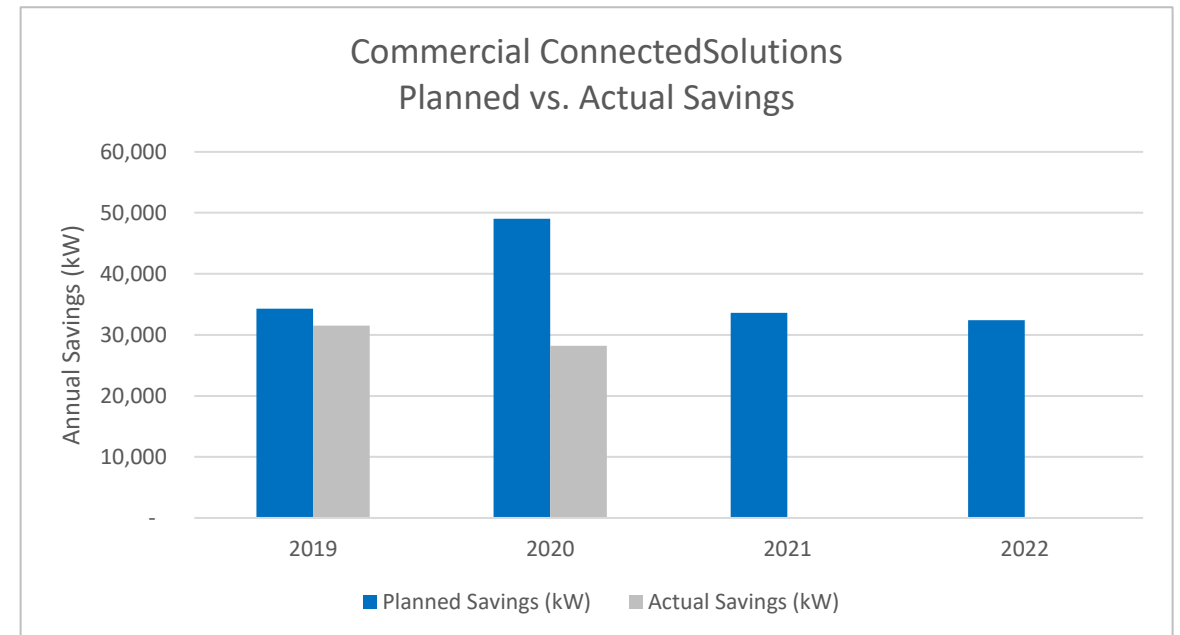
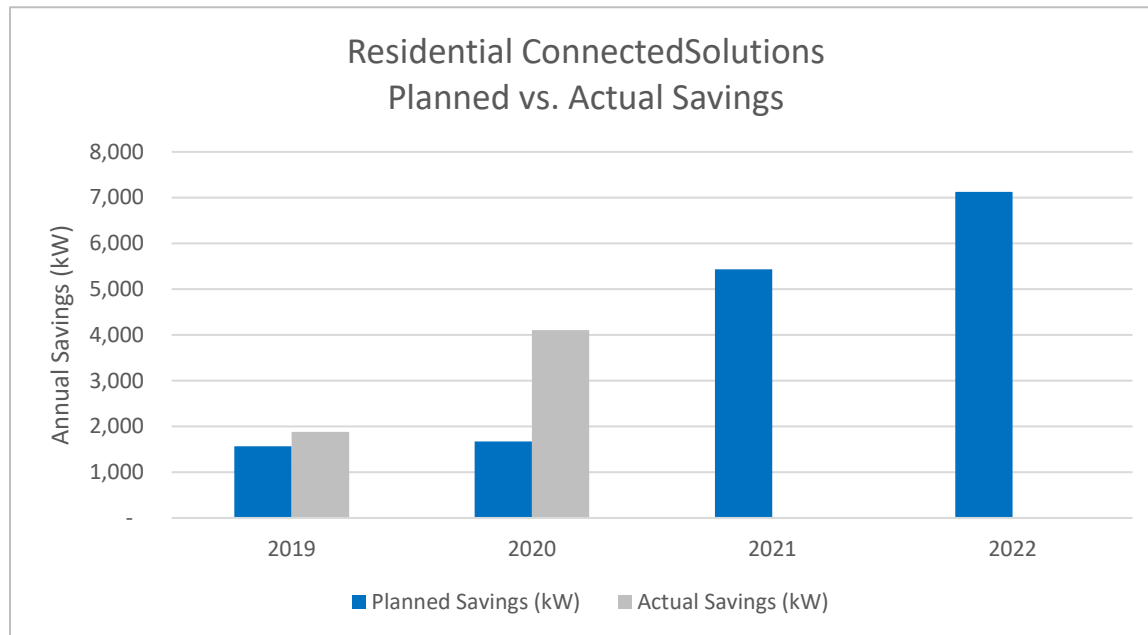
# CROSS SECTOR REVIEW





# Active Demand Savings

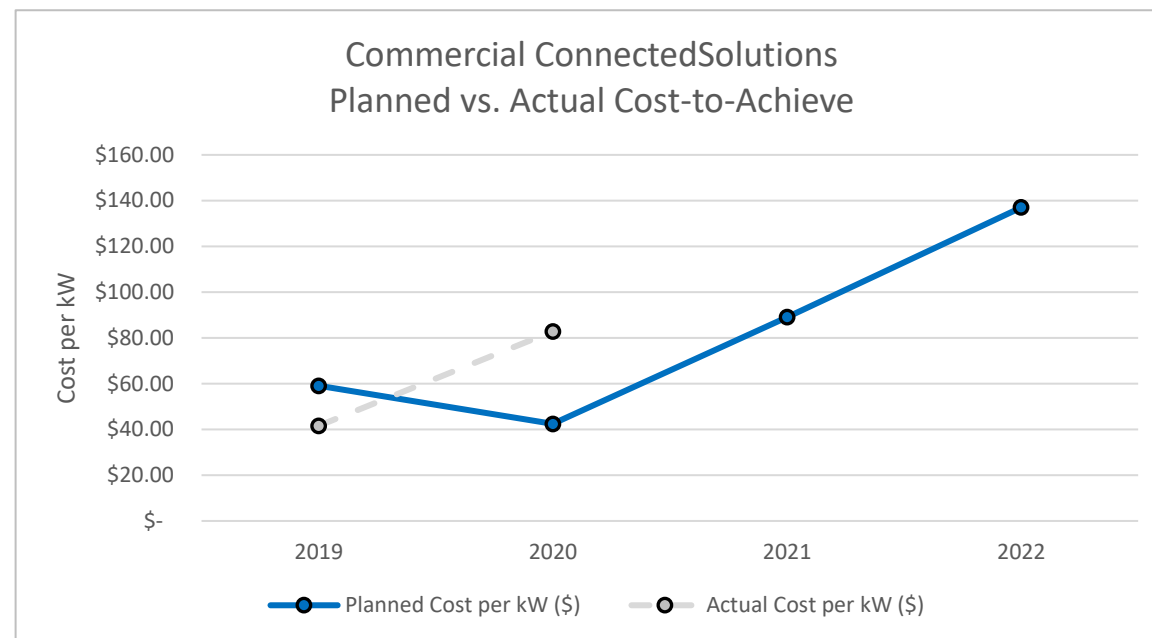
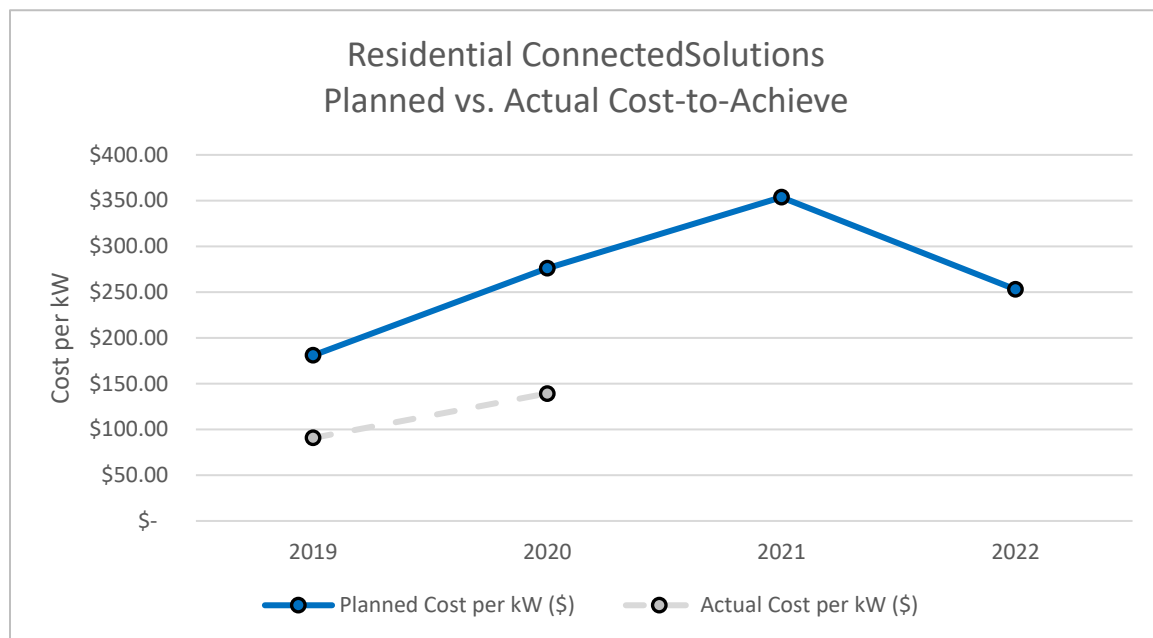
Planned Residential Active Demand savings on upward trajectory, while C&I trending in opposite direction





# Active Demand Cost to Achieve

Cost per kW increasing for Commercial sector with no clear explanation in Plan Text





# Workforce Development

Table 8 Continued Workforce Development Activities

Sector	WFD activity	Description	Target audience	Estimated individuals reached	2022 budget
Res	HVAC Check trainings	HVAC installation best practices training delivered as part of the HVAC program	HVAC technicians	70	\$39,400

Table 9. New Workforce Development Activities for 2022

Sector	WFD activity	Description	Target audience	Estimated individuals reached	2022 budget
C&I	Controls Best Practices training	ASHRAE Guideline 36 training (Sequence of Operations)	Contractors / engineers	40	\$20,000
	(HVAC and Lighting Controls)	Lighting Design Lab (lighting controls) training	Contractors / engineers, program technical and sales staff	20	\$30,000

← Example of continued workforce development activities from 2021

Grid responsive to request to estimate individuals reached

There are nine workforce development commitments in Plan

← Example of new workforce development activities for 2022



# Evaluation, Measurement & Verification

Plan accurately reflects recently completed studies in RI  
C&I Lighting impacts are an area with differential impact

Plan accurately reflects planned RI studies in 2022  
Minor comments to be provided based on recent EM&V conversations

Some studies in RI, and leveraged from MA and CT, still in progress

Incorporation of some study results dependent on timely completion

**Key conversation before Plan finalization:** Response to MA new construction program baseline findings (in addition to regular monthly meetings)



# NEXT STEPS





# Summary

C-Team to finish review of 375+ pages of Plan material and both BC Models, submit comments to National Grid

Emphasize MPS, Targets, Three Year Plan and Council Priorities to identify key areas of feedback and emerging opportunities

Other key points of feedback identified since slides were finalized





# Next Steps

**July 30<sup>th</sup> Comment Deadline:** C-Team to finalize comments on 1<sup>st</sup> Draft 2022 EE Annual Plan, incorporating Council member input

C-Team available for Council member 1-on-1 discussions until deadline

**August 19<sup>th</sup> Council Meeting:** Summary of comments and priorities for Final Draft review

Council member requests for coverage of specific topics/areas welcome

**September 23<sup>rd</sup> Council Meeting:** Discussion and vote on Final Draft of 2022 EE Annual Plan

Will include C-Team findings from review of Final Draft

**October 1<sup>st</sup> Deadline:** Final Draft 2022 EE Annual Plan filed with the PUC



# Council Member Discussion





# APPENDICES





# Electric Lifetime MWhs

## LIFETIME MWhs

% of 2022 Portfolio	Program	2022 (1st Draft)	2022 (1st Draft) Compared to 2021 Plan (PUC Compliance Filing)		2022 (1st Draft) Compared to 2022 Plan (PUC Compliance Filing)	
6%	Small Business Direct Install	61,319	-43,815	-41.7%	-43,815	-41.7%
16%	Large Commercial New Construction	171,413	-18,027	-9.5%	10,341	6.4%
55%	Large Commercial Retrofit	588,941	-155,621	-20.9%	-280,273	-32.2%
<b>77%</b>	<b>C&amp;I Total</b>	<b>821,673</b>	<b>-217,463</b>	<b>-20.9%</b>	<b>-313,747</b>	<b>-27.6%</b>
4%	Single Family - Income Eligible Services	38,506	1,598	4.3%	-220	-0.6%
2%	Income Eligible Multifamily	24,309	1,764	7.8%	1,946	8.7%
<b>6%</b>	<b>Income Eligible Total</b>	<b>62,816</b>	<b>3,361</b>	<b>5.7%</b>	<b>1,726</b>	<b>2.8%</b>
2%	Residential New Construction	17,937	-150	-0.8%	-80	-0.4%
6%	ENERGY STAR® HVAC	64,797	13,488	26.3%	1,461	2.3%
1%	EnergyWise	13,014	-1,371	-9.5%	-353	-2.6%
2%	EnergyWise Multifamily	20,783	4,476	27.4%	-593	-2.8%
3%	Home Energy Reports	26,852	0	0.0%	0	0.0%
0%	ENERGY STAR® Lighting	0	-26,801	-100.0%	0	
4%	Residential Consumer Products	40,877	2,747	7.2%	545	1.4%
<b>17%</b>	<b>Residential Total</b>	<b>184,260</b>	<b>-7,612</b>	<b>-4.0%</b>	<b>981</b>	<b>0.5%</b>
<b>100%</b>	<b>Portfolio Total</b>	<b>1,068,749</b>	<b>-221,713</b>	<b>-17.2%</b>	<b>-311,040</b>	<b>-22.5%</b>



# Electric Annual MWhs

## ANNUAL MWhs

% of 2022 Portfolio	Program	2022 (1st Draft)	2022 (1st Draft) Compared to 2021 Plan (PUC Compliance Filing)		2022 (1st Draft) Compared to 2022 Plan (PUC Compliance Filing)	
8%	Small Business Direct Install	9,696	0	0%	0	0%
9%	Large Commercial New Construction	11,768	-69	-1%	1,212	11%
45%	Large Commercial Retrofit	55,714	-3,782	-6%	-7,132	-11%
<b>62%</b>	<b>C&amp;I Total</b>	<b>77,178</b>	<b>-3,851</b>	<b>-5%</b>	<b>-5,920</b>	<b>-7%</b>
3%	Single Family - Income Eligible Services	3,314	194	6%	39	1%
1%	Income Eligible Multifamily	1,538	-16	-1%	75	5%
<b>4%</b>	<b>Income Eligible Total</b>	<b>4,851</b>	<b>177</b>	<b>4%</b>	<b>114</b>	<b>2%</b>
1%	Residential New Construction	990	10	1%	0	0%
3%	ENERGY STAR® HVAC	3,915	734	23%	1	0%
2%	EnergyWise	2,763	-78	-3%	755	38%
1%	EnergyWise Multifamily	1,424	183	15%	-21	-1%
22%	Home Energy Reports	26,852	0	0%	0	0%
0%	ENERGY STAR® Lighting	0	-11,533	-100%	0	
5%	Residential Consumer Products	6,285	359	6%	25	0%
<b>34%</b>	<b>Residential Total</b>	<b>42,228</b>	<b>-10,325</b>	<b>-20%</b>	<b>761</b>	<b>2%</b>



# Electric Budget

## IMPLEMENTATION BUDGET

% of 2022 Portfolio	Program	2022 (1st Draft)	2022 (1st Draft) Compared to 2021 Plan (PUC Compliance Filing)		2022 (1st Draft) Compared to 2022 Plan (PUC Compliance Filing)	
8%	Small Business Direct Install	\$8,861,816	-\$21,743	0%	\$504,858	6%
8%	Large Commercial New Construction	\$8,847,630	\$659,455	8%	\$1,098,196	14%
30%	Large Commercial Retrofit	\$35,559,763	\$3,994,522	13%	-\$2,903,824	-8%
6%	C&I Financing	\$7,000,000	\$2,000,000	40%	\$2,000,000	40%
0%	Community Based Initiatives - C&I	\$84,965	\$10,434	14%	\$0	0%
0%	Commercial Pilots	\$0	\$0		\$0	
4%	Commercial ConnectedSolutions	\$4,438,253	\$1,448,147	48%	\$889,632	25%
0%	Commercial Workforce Development	\$171,500	\$171,500		\$171,500	
55%	<b>C&amp;I Total</b>	<b>\$64,963,928</b>	<b>\$8,262,316</b>	<b>15%</b>	<b>\$1,760,362</b>	<b>3%</b>
11%	Single Family - Income Eligible Services	\$13,248,998	\$402,917	3%	-\$467,222	-3%
3%	Income Eligible Multifamily	\$3,530,629	-\$18,354	-1%	-\$47,571	-1%
0%	Income Eligible Workforce Development	\$0	\$0		\$0	
14%	<b>Income Eligible Total</b>	<b>\$16,779,628</b>	<b>\$384,562</b>	<b>2%</b>	<b>-\$514,793</b>	<b>-3%</b>
1%	Residential New Construction	\$1,630,346	\$19,011	1%	\$141,769	10%
4%	ENERGY STAR® HVAC	\$4,226,587	\$738,789	21%	-\$68,134	-2%
14%	EnergyWise	\$16,115,962	\$423,812	3%	-\$748,335	-4%
3%	EnergyWise Multifamily	\$3,279,493	\$475,198	17%	-\$1,288	0%
2%	Home Energy Reports	\$2,637,552	-\$4,129	0%	\$13,455	1%
0%	ENERGY STAR® Lighting	\$0	-\$5,274,753	-100%	\$0	
2%	Residential Consumer Products	\$2,864,236	\$182,999	7%	\$5,019	0%
0%	Energy Efficiency Education	\$40,000	\$0	0%	\$0	0%
0%	Comprehensive Marketing - Residential	\$356,802	\$24,095	7%	\$7,845	2%
0%	Community Based Initiatives - Residential	\$254,897	\$28,735	13%	-\$2,568	-1%
2%	Residential ConnectedSolutions	\$1,802,413	-\$118,122	-6%	-\$648,744	-26%
0%	Residential Pilots	\$0	\$0		\$0	
0%	Residential Workforce Development	\$0	\$0		\$0	
28%	<b>Residential Total</b>	<b>\$33,208,287</b>	<b>-\$3,504,364</b>	<b>-10%</b>	<b>-\$1,300,981</b>	<b>-4%</b>
1%	EERMC	\$1,060,305	\$321,800	44%	\$1,328	0%
1%	OER	\$1,060,305	\$321,800	44%	\$1,328	0%
2%	<b>Regulatory Total</b>	<b>\$2,120,611</b>	<b>\$643,601</b>	<b>44%</b>	<b>\$2,656</b>	<b>0%</b>
100%	<b>Portfolio Total</b>	<b>\$117,072,453</b>	<b>\$5,786,115</b>	<b>5%</b>	<b>-\$52,756</b>	<b>0%</b>



# Electric Lifetime Cost to Achieve (\$/kWh)

## \$/LIFETIME kWh

Program	2022 (1st Draft)	2022 (1st Draft) Compared to 2021 Plan (PUC Compliance Filing)		2022 (1st Draft) Compared to 2022 Plan (PUC Compliance Filing)	
		Value	%	Value	%
Small Business Direct Install	\$0.14	\$0.06	71%	\$0.07	82%
Large Commercial New Construction	\$0.05	\$0.01	19%	\$0.00	7%
Large Commercial Retrofit	\$0.06	\$0.02	42%	\$0.02	36%
<b>C&amp;I Total</b>	<b>\$0.08</b>	<b>\$0.02</b>	<b>45%</b>	<b>\$0.02</b>	<b>42%</b>
Single Family - Income Eligible Services	\$0.34	\$0.00	-1%	-\$0.01	-3%
Income Eligible Multifamily	\$0.15	-\$0.01	-8%	-\$0.01	-9%
<b>Income Eligible Total</b>	<b>\$0.27</b>	<b>-\$0.01</b>	<b>-3%</b>	<b>-\$0.02</b>	<b>-6%</b>
Residential New Construction	\$0.09	\$0.00	2%	\$0.01	10%
ENERGY STAR® HVAC	\$0.07	\$0.00	-4%	\$0.00	-4%
EnergyWise	\$1.24	\$0.15	14%	-\$0.02	-2%
EnergyWise Multifamily	\$0.16	-\$0.01	-8%	\$0.00	3%
Home Energy Reports	\$0.10	\$0.00	0%	\$0.00	1%
ENERGY STAR® Lighting	N/A	N/A		N/A	
Residential Consumer Products	\$0.07	\$0.00	0%	\$0.00	-1%
<b>Residential Total</b>	<b>\$0.18</b>	<b>-\$0.01</b>	<b>-6%</b>	<b>-\$0.01</b>	<b>-4%</b>
<b>Portfolio Total</b>	<b>\$0.11</b>	<b>\$0.02</b>	<b>27%</b>	<b>\$0.02</b>	<b>29%</b>



# Electric Annual Cost to Achieve (\$/kWh)

## \$/ANNUAL kWh

Program	2022 (1st Draft)	2022 (1st Draft) Compared to 2021 Plan (PUC Compliance Filing)		2022 (1st Draft) Compared to 2022 Plan (PUC Compliance Filing)	
Small Business Direct Install	\$0.91	\$0.00	0%	\$0.05	6%
Large Commercial New Construction	\$0.75	\$0.06	9%	\$0.02	2%
Large Commercial Retrofit	\$0.64	\$0.11	20%	\$0.03	4%
<b>C&amp;I Total</b>	<b>\$0.84</b>	<b>\$0.14</b>	<b>20%</b>	<b>\$0.08</b>	<b>11%</b>
Single Family - Income Eligible Services	\$4.00	-\$0.12	-3%	-\$0.19	-5%
Income Eligible Multifamily	\$2.30	\$0.01	1%	-\$0.15	-6%
<b>Income Eligible Total</b>	<b>\$3.46</b>	<b>-\$0.05</b>	<b>-1%</b>	<b>-\$0.19</b>	<b>-5%</b>
Residential New Construction	\$1.65	\$0.00	0%	\$0.14	10%
ENERGY STAR® HVAC	\$1.08	-\$0.02	-2%	-\$0.02	-2%
EnergyWise	\$5.83	\$0.31	6%	<b>-\$2.57</b>	<b>-31%</b>
EnergyWise Multifamily	\$2.30	\$0.04	2%	\$0.03	1%
Home Energy Reports	\$0.10	\$0.00	0%	\$0.00	1%
ENERGY STAR® Lighting	N/A	N/A		N/A	
Residential Consumer Products	\$0.46	\$0.00	1%	\$0.00	0%
<b>Residential Total</b>	<b>\$0.79</b>	<b>\$0.09</b>	<b>13%</b>	<b>-\$0.05</b>	<b>-6%</b>
<b>Portfolio Total</b>	<b>\$0.94</b>	<b>\$0.14</b>	<b>17%</b>	<b>\$0.04</b>	<b>4%</b>





# Gas Lifetime MMBtus

		<b>LIFETIME MMBtus</b>		<b>2022 (1st Draft) Compared to 2021 Plan (PUC Compliance Filing)</b>		<b>2022 (1st Draft) Compared to 2022 Plan (PUC Compliance Filing)</b>	
<b>% of 2022 Portfolio</b>	<b>Program</b>	<b>2022 (1st Draft)</b>					
21%	Large Commercial New Construction	831,093		393,694	90%	370,426	80%
30%	Large Commercial Retrofit	1,210,300		-245,476	-17%	-349,086	-22%
1%	Small Business Direct Install	38,296		-10,565	-22%	0	0%
3%	Commercial & Industrial Multifamily	131,220		-10,649	-8%	-10,649	-8%
<b>55%</b>	<b>C&amp;I Total</b>	<b>2,210,909</b>		127,004	6%	10,691	0%
5%	Single Family - Income Eligible Services	218,847		17,743	9%	3,666	2%
8%	Income Eligible Multifamily	306,783		-8,762	-3%	-8,762	-3%
<b>13%</b>	<b>Income Eligible Total</b>	<b>525,630</b>		8,981	2%	-5,097	-1%
12%	Energy Star® HVAC	470,156		-197,329	-30%	-259,496	-36%
12%	EnergyWise	478,550		2,001	0%	-16,502	-3%
4%	EnergyWise Multifamily	147,064		-1,611	-1%	-1,929	-1%
2%	Home Energy Reports	93,548		0	0%	0	0%
2%	Residential New Construction	77,018		-8,253	-10%	-3,054	-4%
<b>32%</b>	<b>Residential Total</b>	<b>1,266,337</b>		-205,193	-14%	-280,980	-18%
<b>100%</b>	<b>Portfolio Total</b>	<b>4,002,876</b>		-69,208	-2%	-275,386	-6%



# Gas Annual MMBtus

## ANNUAL MMBtus

% of 2022 Portfolio	Program	2022 (1st Draft)	2022 (1st Draft) Compared to 2021 Plan (PUC Compliance Filing)		2022 (1st Draft) Compared to 2022 Plan (PUC Compliance Filing)	
			MMBtus	%	MMBtus	%
14%	Large Commercial New Construction	54,068	26,437	96%	25,073	86%
36%	Large Commercial Retrofit	138,407	-48,876	-26%	-51,669	-27%
1%	Small Business Direct Install	3,830	-1,057	-22%	0	0%
2%	Commercial & Industrial Multifamily	8,803	-641	-7%	-641	-7%
<b>53%</b>	<b>C&amp;I Total</b>	<b>205,108</b>	<b>-24,135</b>	<b>-11%</b>	<b>-27,237</b>	<b>-12%</b>
3%	Single Family - Income Eligible Services	10,942	887	9%	183	2%
4%	Income Eligible Multifamily	13,653	-745	-5%	-745	-5%
<b>6%</b>	<b>Income Eligible Total</b>	<b>24,596</b>	<b>142</b>	<b>1%</b>	<b>-562</b>	<b>-2%</b>
7%	Energy Star® HVAC	28,671	-9,674	-25%	-13,172	-31%
5%	EnergyWise	20,850	-20	0%	-826	-4%
2%	EnergyWise Multifamily	8,279	-354	-4%	-396	-5%
24%	Home Energy Reports	93,548	0	0%	0	0%
1%	Residential New Construction	4,111	-333	-7%	-147	-3%
<b>40%</b>	<b>Residential Total</b>	<b>155,459</b>	<b>-10,380</b>	<b>-6%</b>	<b>-14,541</b>	<b>-9%</b>
<b>100%</b>	<b>Portfolio Total</b>	<b>385,163</b>	<b>-34,374</b>	<b>-8%</b>	<b>-42,341</b>	<b>-10%</b>



# Gas Budget

## IMPLEMENTATION BUDGET

% of 2022 Portfolio	Program	2022 (1st Draft)	2022 (1st Draft) Compared to 2021 Plan (PUC Compliance Filing)		2022 (1st Draft) Compared to 2022 Plan (PUC Compliance Filing)	
9%	Large Commercial New Construction	\$3,227,005	\$592,843	23%	\$490,852	18%
13%	Large Commercial Retrofit	\$4,685,069	-\$369,047	-7%	-\$465,839	-9%
1%	Small Business Direct Install	\$359,460	\$26,809	8%	-\$19,880	-5%
3%	Commercial & Industrial Multifamily	\$963,913	\$10,694	1%	-\$68,159	-7%
0%	Comprehensive Marketing - Commercial and Industrial	\$0	\$0		\$0	
1%	Commercial Pilots	\$219,020	\$3,240	2%	\$0	0%
0%	Finance Costs	\$0	\$0		\$0	
0%	Community Based Initiatives - C&I	\$28,322	\$3,478	14%	\$0	0%
0%	RIIB		\$0		\$0	
0%	Commercial Workforce Development	\$73,500	\$73,500		\$73,500	
<b>27%</b>	<b>C&amp;I Total</b>	<b>\$9,556,289</b>	<b>\$341,517</b>	<b>4%</b>	<b>\$10,474</b>	<b>0%</b>
18%	Single Family - Income Eligible Services	\$6,367,127	\$414,803	7%	-\$9,762	0%
8%	Income Eligible Multifamily	\$2,948,816	-\$60,632	-2%	-\$32,290	-1%
0%	Income Eligible Workforce Development	\$0	\$0		\$0	
<b>27%</b>	<b>Income Eligible Total</b>	<b>\$9,315,942</b>	<b>\$354,171</b>	<b>4%</b>	<b>-\$42,051</b>	<b>0%</b>
11%	Energy Star® HVAC	\$3,975,219	\$302,172	8%	\$34,506	1%
25%	EnergyWise	\$8,642,343	\$524,744	6%	-\$119,435	-1%
4%	EnergyWise Multifamily	\$1,501,991	\$10,401	1%	\$10,627	1%
1%	Home Energy Reports	\$441,954	-\$8,910	-2%	\$663	0%
2%	Residential New Construction	\$592,650	-\$82,177	-12%	-\$18,427	-3%
0%	Comprehensive Marketing - Residential	\$67,551	\$2,793	4%	-\$207	0%
0%	Residential Pilots	\$0	\$0		\$0	
0%	Community Based Initiatives - Residential	\$84,965	\$9,126	12%	-\$1,308	-2%
0%	Residential Workforce Development	\$0	\$0		\$0	
<b>44%</b>	<b>Residential Total</b>	<b>\$15,306,673</b>	<b>\$758,149</b>	<b>5%</b>	<b>-\$93,582</b>	<b>-1%</b>
1%	EERMC	\$421,115	\$146,048	53%	\$61,425	17%
1%	OER	\$421,115	\$146,048	53%	\$61,425	17%
<b>2%</b>	<b>Regulatory Total</b>	<b>\$842,230</b>	<b>\$292,097</b>	<b>53%</b>	<b>\$122,850</b>	<b>17%</b>
<b>100%</b>	<b>Portfolio Total</b>	<b>\$35,021,135</b>	<b>\$1,745,934</b>	<b>5%</b>	<b>-\$2,309</b>	<b>0%</b>



# Gas Lifetime Cost to Achieve (\$/MMBtu)

## \$/LIFETIME MMBtu

Program	2022 (1st Draft)	2022 (1st Draft) Compared to 2021 Plan (PUC Compliance Filing)		2022 (1st Draft) Compared to 2022 Plan (PUC Compliance Filing)	
		Change (\$)	Change (%)	Change (\$)	Change (%)
Large Commercial New Construction	\$3.88	-\$2.14	-36%	-\$2.06	-35%
Large Commercial Retrofit	\$3.87	\$0.40	11%	\$0.57	17%
Small Business Direct Install	\$9.39	\$2.58	38%	-\$0.52	-5%
Commercial & Industrial Multifamily	\$7.35	\$0.63	9%	\$0.07	1%
<b>C&amp;I Total</b>	<b>\$4.32</b>	<b>-\$0.10</b>	<b>-2%</b>	<b>-\$0.02</b>	<b>0%</b>
Single Family - Income Eligible Services	\$29.09	-\$0.50	-2%	-\$0.54	-2%
Income Eligible Multifamily	\$9.61	\$0.07	1%	\$0.16	2%
<b>Income Eligible Total</b>	<b>\$17.72</b>	<b>\$0.38</b>	<b>2%</b>	<b>\$0.09</b>	<b>1%</b>
Energy Star® HVAC	\$8.46	\$2.95	54%	\$3.05	57%
EnergyWise	\$18.06	\$1.03	6%	\$0.36	2%
EnergyWise Multifamily	\$10.21	\$0.18	2%	\$0.20	2%
Home Energy Reports	\$4.72	-\$0.10	-2%	\$0.01	0%
Residential New Construction	\$7.69	-\$0.22	-3%	\$0.06	1%
<b>Residential Total</b>	<b>\$12.09</b>	<b>\$2.20</b>	<b>22%</b>	<b>\$2.13</b>	<b>21%</b>
<b>Portfolio Total</b>	<b>\$8.75</b>	<b>\$0.58</b>	<b>7%</b>	<b>\$0.56</b>	<b>7%</b>



# Gas Annual Cost to Achieve (\$/MMBtu)

## \$/ANNUAL MMBtu

Program	2022 (1st Draft)	2022 (1st Draft) Compared to 2021 Plan (PUC Compliance Filing)		2022 (1st Draft) Compared to 2022 Plan (PUC Compliance Filing)	
Large Commercial New Construction	\$59.68	-\$35.65	-37%	-\$34.68	-37%
Large Commercial Retrofit	\$33.85	\$6.86	25%	\$6.75	25%
Small Business Direct Install	\$93.86	\$25.78	38%	-\$5.19	-5%
Commercial & Industrial Multifamily	\$109.50	\$8.56	8%	\$0.21	0%
<b>C&amp;I Total</b>	<b>\$46.59</b>	<b>\$6.40</b>	<b>16%</b>	<b>\$5.51</b>	<b>13%</b>
Single Family - Income Eligible Services	\$581.88	-\$10.09	-2%	-\$10.82	-2%
Income Eligible Multifamily	\$215.98	\$6.97	3%	\$8.94	4%
<b>Income Eligible Total</b>	<b>\$378.76</b>	<b>\$12.29</b>	<b>3%</b>	<b>\$6.79</b>	<b>2%</b>
Energy Star® HVAC	\$138.65	\$42.86	45%	\$44.47	47%
EnergyWise	\$414.50	\$25.53	7%	\$10.28	3%
EnergyWise Multifamily	\$181.42	\$8.65	5%	\$9.52	6%
Home Energy Reports	\$4.72	-\$0.10	-2%	\$0.01	0%
Residential New Construction	\$144.15	-\$7.68	-5%	\$0.64	0%
<b>Residential Total</b>	<b>\$98.46</b>	<b>\$10.73</b>	<b>12%</b>	<b>\$7.87</b>	<b>9%</b>
<b>Portfolio Total</b>	<b>\$90.93</b>	<b>\$11.61</b>	<b>15%</b>	<b>\$9.00</b>	<b>11%</b>



# Active Demand kW Savings

## Connected Solutions (kW Active Demand)

Program	2022 (1st Draft)
C&I Connected Solutions	32,400
Residential Connected Solutions	7,126
<b>Portfolio Total</b>	<b>39,526</b>

2022 (1st Draft) Compared to 2021 Plan (PUC Compliance Filing)	
-1,200.0	-4%
1,695.0	31%
495.0	1%

2022 (1st Draft) Compared to 2022 Plan (PUC Compliance Filing)	
-5,400.0	-14%
-264.6	-4%
-5,664.6	-13%



# Active Demand Cost to Achieve (\$/kW)

## Connected Solutions (\$/kW)

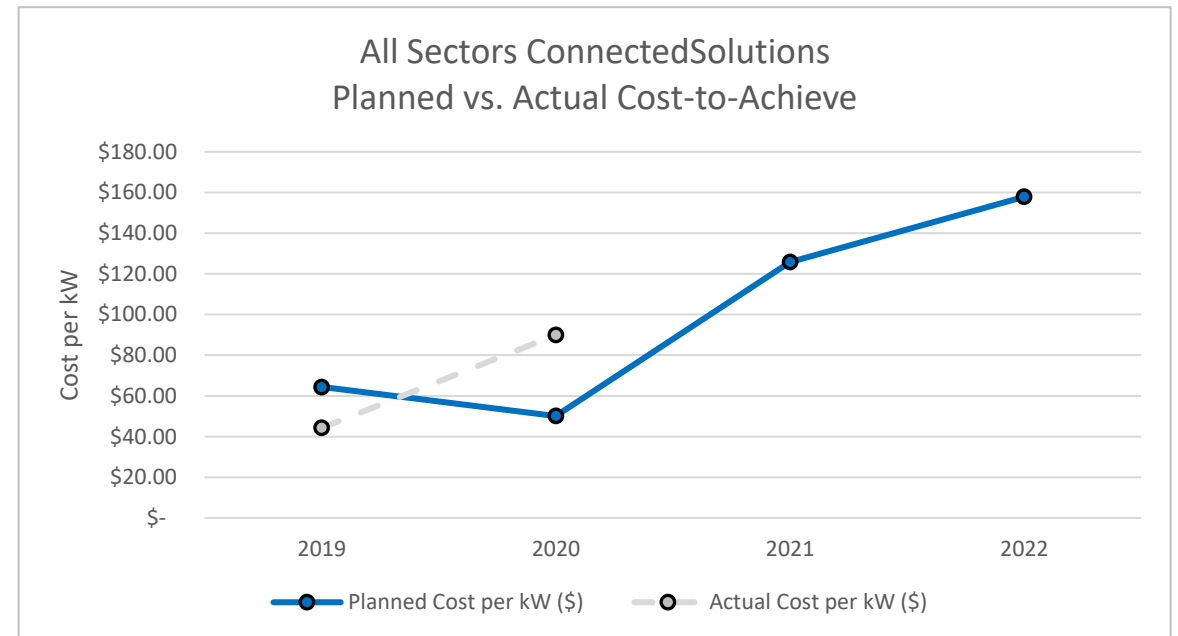
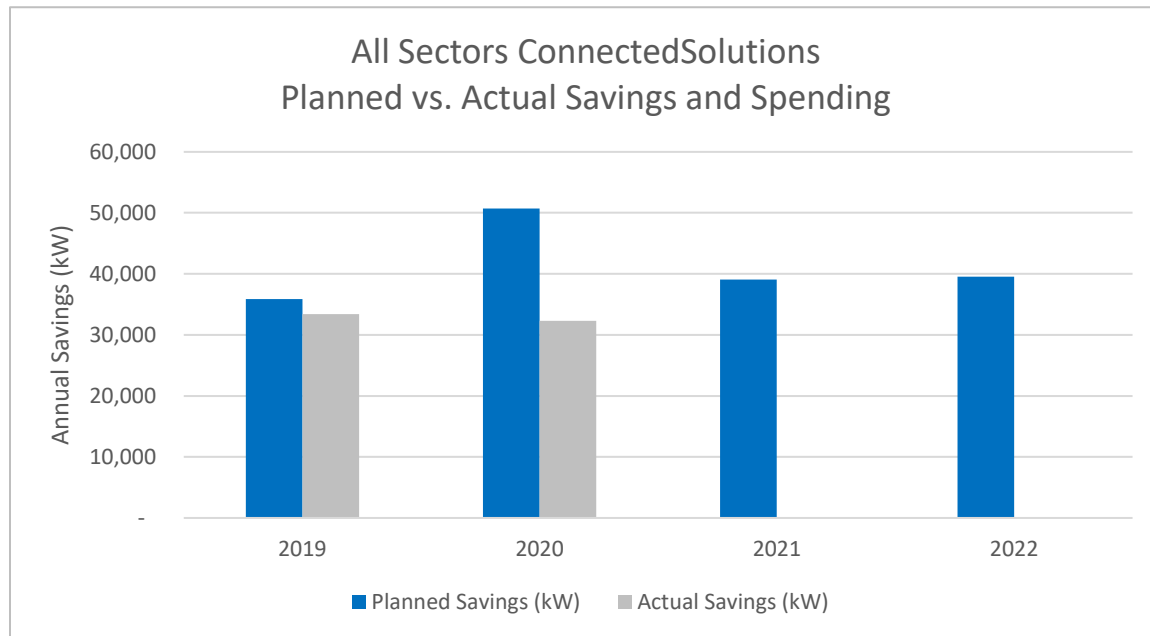
Program	2022 (1st Draft)
C&I Connected Solutions	\$136.98
Residential Connected Solutions	\$252.92
<b>Portfolio Total</b>	<b>\$157.89</b>

2022 (1st Draft) Compared to 2021 Plan (PUC Compliance Filing)	
\$47.99	54%
-\$100.68	-28%
\$32.07	25%

2022 (1st Draft) Compared to 2022 Plan (PUC Compliance Filing)	
\$43.10	46%
-\$78.72	-24%
\$25.12	19%



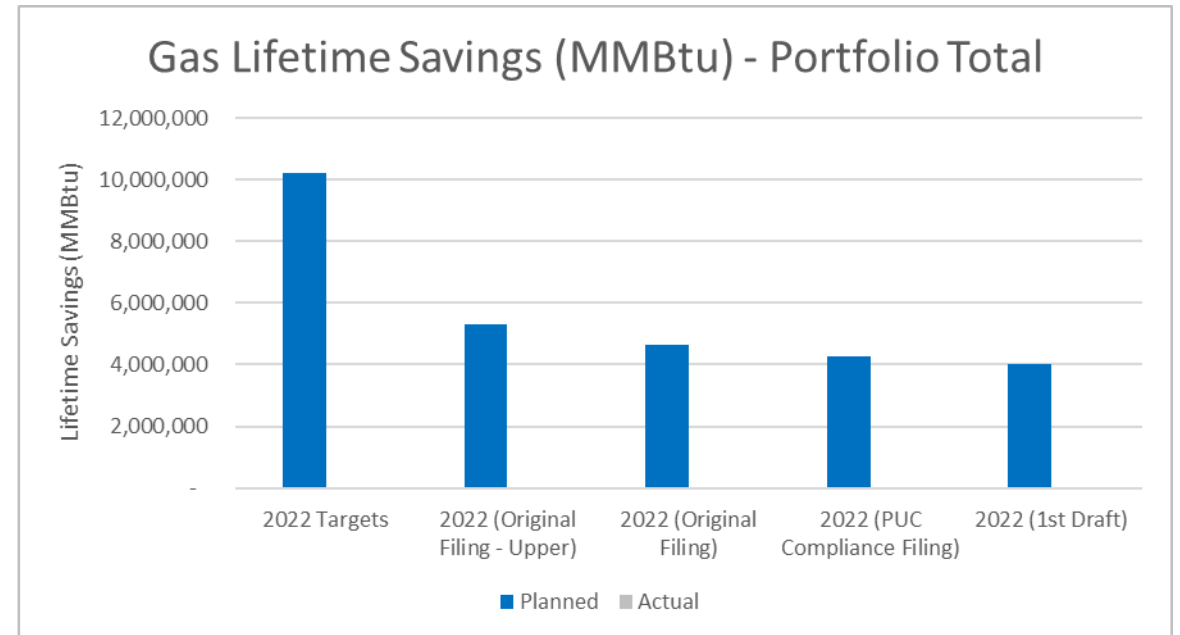
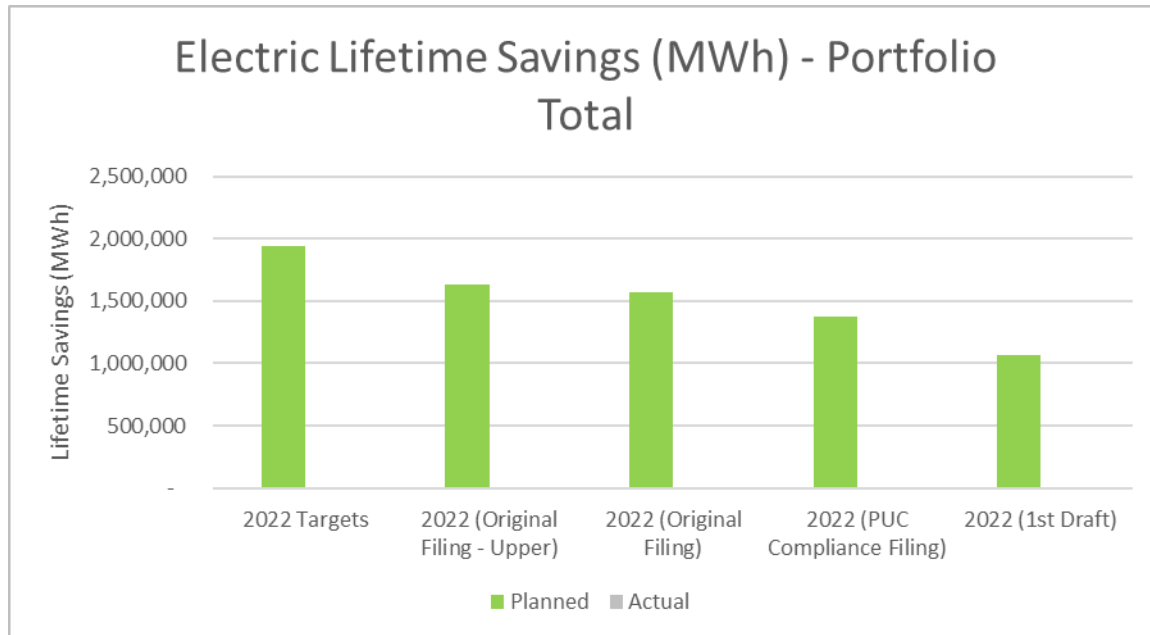
# Electric Portfolio Active Demand





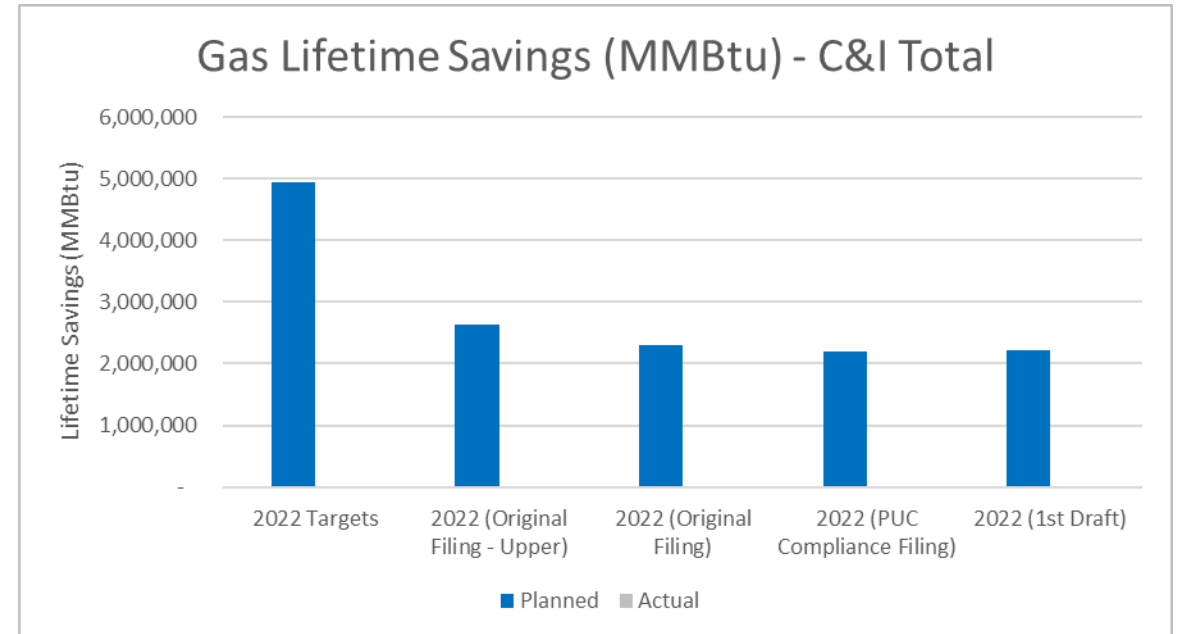
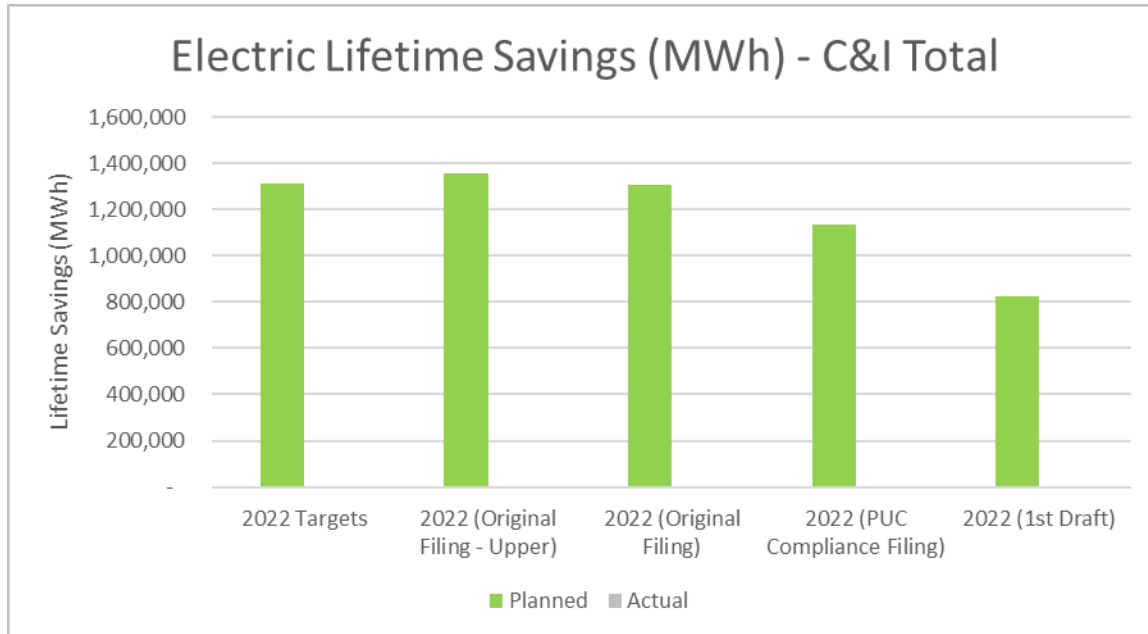


# 2022 Cross-Scenario Portfolio Savings





# 2022 Cross-Scenario C&I Savings





# 2022 Cross-Scenario Residential and IES Savings

